



May

13 - 17

THE WEB CONFERENCE 2019

30 years of the web

WE NEED A NEW WEB

Conference Handbook



**THE WEB
CONFERENCE**

San Francisco, May 13-17, 2019
<http://www2019.thewebconf.org/>





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Conference Chairs' Welcome

It is our great pleasure to welcome you to *The Web Conference 2019*. The Web Conference is the premier venue focused on understanding the current state and the evolution of the Web through the lens of computer science, computational social science, economics, policy, and many other disciplines. The 2019 edition of the conference is a reflection point as we celebrate the 30th anniversary of the Web.

The technical program of this year's edition of the conference consists of three keynotes given by Jeff Dean, Lawrence Lessig and Claire Wardle, a plenary panel to celebrate the 30 years of the Web, 12 tracks for refereed research papers (including full papers and short papers), and a demonstrations track that are published in the main volume of the proceedings. In addition we have 23 workshops, 22 tutorials, and the Ph.D. Consortium. We also have four special tracks: BIG, The Web of Health, The Open Web, and Building an Ethical Web; as well as two co-located events, W4A and W3C.

We are thankful to all the people that helped us organizing the conference and that are listed in the next pages. Without them, this would have never happened. Special thanks to all our sponsors, as they make the quality difference: Microsoft (Diamond); Amazon, Bloomberg and Google (Gold); Criteo AI Lab, CISCO, NTENT, Spotify, Yahoo Research and Wikimedia Foundation (Silver); Baidu, DiDi, ebay, Facebook, LinkedIn, Megagon Labs, Mix, Mozilla, Netflix Research, Northeastern University, Pinterest, Quora, Visa Research and Walmart Labs (Bronze); as well as Airbnb, Letgo, Moore Foundation and Webcastor.

Finally, this conference would have not been possible if together with Ashish Goel and Ben Steichen, we did not start Web4Good, a California based non-profit company that undersigned the event with IW3C2.

So we hope that you enjoy this week as well as San Francisco!

Ricardo Baeza-Yates

General Co-Chair

NTENT & Northeastern University

USA

Leila Zia

General Co-Chair

Wikimedia Foundation

USA



Message from the Chair of IW3C2

On behalf of the International World Wide Web Conference Committee (IW3C2), the steering committee for this conference series, I welcome you to the 28th conference of our series. The first conference of the series, WWW1, was held at CERN, where the Web was born, in 1994 and organized by Robert Cailliau. The IW3C2 was founded by Joseph Hardin and Robert Cailliau later in 1994 and has been responsible for the conference series ever since. Starting last year, we have rebranded the conference series as “The Web Conference”. The Web Conference 2018 was held in Lyon, 2020 will be held in Taipei, and the 2021 edition will be held in Ljubljana. It is a great pleasure to be in San Francisco for the Web Conference 2019.

The Web Conference series provides the world with a premier forum about the development of the Web, the standardization of its associated technologies, and the Web's impact on society and culture. These conferences bring together researchers, developers, users, and vendors – indeed all of you who are passionate about the Web and what it has to offer, now and in the future. Part of what is exciting about this series is the cross boundary and eclectic nature of the topics covered, and the opportunity it provides for exploration of new directions, both technological and social.

We appreciate the cooperation of the ACM, which helps make our conference the best in the Web area and also many thanks to all the Web Conference 2019 sponsors, who make this event possible.

But we are particularly grateful to the team in San Francisco for organizing the Web Conference 2019. We have long wanted to hold a conference in the Bay area because of the amazing tech ecosystem in the city and surrounding area as well as down in the valley, much of it driven by the internet and the Web. Previously the 6th International WWW conference was held at SLAC in 1997 chaired by the legendary Bebo White. In those heady days of the early Web it was our biggest conference. Bebo was instrumental in persuading Ric and Leila to agree to run the Web Conference 2019 in San Francisco. They have sacrificed much personally to do this and have also pulled together an amazing team to help them. My personal thanks to all of you. I know it's going to be a wonderful conference. Enjoy!

Professor Dame Wendy Hall

DBE FRS FREng

Regius Professor of Computer Science

Director, Web Science Institute

University of Southampton

Technical Chairs' Message

The 12 research tracks attracted submissions from 5042 distinct authors from 53 countries spanning six continents. Submissions were rigorously reviewed by a program committee (PC) comprising 27 track chairs, 69 senior PC members (on three of the tracks), 1112 PC members, and 594 external reviewers. A total of 5280 reviews were provided, with each paper receiving at least three reviews, and many papers receiving four or more reviews.

During the discussion phase, PC members, senior PC members, and track chairs discussed the reviews in detail. Meta-reviews were provided for most submissions, especially for borderline papers and high-scoring rejects, summarizing the reviews and discussion. For consistency across tracks, final decisions on papers were made at the face-to-face PC meeting between track chairs and the PC chairs. We accepted 225 (18%) of the 1247 full papers and 72 (20%) of the 361 short papers submitted to the research tracks. We also accepted a small number of full papers as short papers. New this year, all full and short papers are presented as a poster; and some full papers also have an oral presentation.

Additionally, 27 submissions were selected for the demonstrations track after being reviewed by 59 PC members, with each of them reviewing an average of 3.95 papers. The majority of the demos got reviewed by 4 reviewers with a minimum of 3 reviewers per submission. The demos are presented together with the posters.

The Workshop Track received 45 submissions, which ultimately culminated in 23 workshops (among which many of the original proposals were combined). Workshops were presented either as half- or full-day forums during the first two days of the conference, and included presentations, poster sessions, and panel discussions.

Thirty-five submissions were made to the Tutorials track, among which 22 were accepted for inclusion in the conference.

The PhD Symposium attracted 18 submissions, among which 13 were accepted for presentation at the conference. The accepted submissions are presented during a dedicated session at the conference, geared toward giving PhD students feedback prior to the completion of their dissertation. They also have the opportunity to show their work in one of the posters session.

Ling Liu

*Program Co-Chair
Georgia Tech University
USA*

Ryen W. White

*Program Co-Chair
Microsoft Research
USA*

Amin Mantrach

*Demonstrations Co-Chair
Criteo AI Lab
USA*

Fabrizio Silvestri

*Demonstrations Co-Chair
Facebook
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Sihem Amer-Yahia

*Workshops Co-Chair
CRNS & Université
Grenoble Alps, France*

Mohammad Madian

*Workshops Co-Chair
Google
USA*

Ashish Goel

*Tutorials Chair
Stanford University
USA*

Geert-Jan Houben

*PhD Symposium Co-Chair
TU Delft
The Netherlands*

Kristina Lerman

*PhD Symposium Co-Chair
Information Sciences Institute,
USA*

Conference Organization

- Conference Chairs:** Ricardo Baeza-Yates (NTENT & Northeastern University, USA)
Leila Zia (Wikimedia Foundation, USA)
- Program Chairs:** Ling Liu (Georgia Tech, USA)
Ryen White (Microsoft Research, USA)
- Local Organizing Chairs:** Chris Brooks (University of San Francisco, USA)
Regan Robertson (Executiveevents, USA)
Bebo White (SLAC National Accelerator Laboratory, USA)
- Treasurer:** Fabian Suchanek (Télécom ParisTech University, France)
- Tutorial Chair:** Ashish Goel (Stanford University, USA)
- Workshop Chairs:** Sihem Amer-Yahia (CNRS & Université Grenoble Alpes, France)
Mohammad Mahdian (Google, USA)
- Demo Chairs:** Amin Mantrach (Criteo, USA)
Fabrizio Silvestri (Facebook, UK)
- PhD Symposium Chairs:** Geert-Jan Houben (TU Delft, The Netherlands)
Kristina Lerman (Information Sciences Institute, USA)
- BIG Chairs:** Vanja Josifovski (Airbnb, USA)
Liane Lewin-Eytan (Amazon, Israel)
- Web of Health Chairs:** Evgeniy Gabrilovich (Google, USA)
Nigam H. Shah (Stanford University, USA)
- Future of the Open Web Chairs:** Stephen LaPorte (Wikimedia Foundation, USA)
Robert West (EPFL, Switzerland)
- Designing an Ethical Web Chairs:** Sharad Goel (Stanford University, USA)
Deirdre Mulligan (UC Berkeley, USA)
- Sponsorship Chairs:** Nuria Oliver (Vodafone Research and DataPop Alliance, Spain)
Jie Tang (Tsinghua University, China)
Kuansan Wang (Microsoft, USA)
- Student Relations Chair:** Ben Steichen (Cal Poly Pomona, USA)
- Student Scholarship Chairs:** Lora Aroyo (VU Amsterdam, The Netherlands)
Diego Sáez-Trumper (Wikimedia Foundation, Spain)


Communication Chairs: Dawn Anderson (Move It Marketing, UK)
Brent Hecht (Northwestern University, USA)
Xin Fu (Facebook, USA)

Proceedings Chair: Julian McAuley (University of California San Diego, USA)

Poster Chairs: Ashton Anderson (University of Toronto, Canada)
Joe DeBlasio (Google, USA)
Reza Zafarani (Syracuse University, USA)

Research Tracks Chairs: Tarek Abdelzaher (University of Illinois Urbana-Champaign, USA)
Karl Aberer (EPFL, Switzerland)
Omar Alonso (Microsoft, USA)
Elisa Bertino (Purdue University, USA)
Paolo Boldi (University of Milan, Italy)
Carlos Castillo (Pompeu Fabra University, Spain)
Munmun De Choudhury (Georgia Institute of Technology, USA)
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Keynote on Wednesday, May 15 9AM, Grand Ballroom

Deep Learning for Solving Important Problems Jeff Dean, *Senior Fellow, Google*

Abstract: In this keynote we describe progress in work that our research teams have been doing over the past years, including advances in difficult problems in artificial intelligence, on building large-scale computer systems for machine learning research, and, in collaboration with many teams at Google, on applying our research and systems to dozens of Google products. Our group has open-sourced the TensorFlow system, a widely popular system designed to easily express machine learning ideas, and to quickly train, evaluate and deploy machine learning systems. We then highlight some of our research accomplishments, and relate them to the National Academy of Engineering's Grand Engineering Challenges for the 21st Century. This is joint work with many people at Google.

Biography: Jeff Dean joined Google in 1999 and is currently a Google Senior Fellow, leading Google AI and related research efforts. His teams are working on systems for speech recognition, computer vision, language understanding, and various other machine learning tasks. He has co-designed/implemented many generations of Google's crawling, indexing, and query serving systems, and co-designed/implemented major pieces of Google's initial advertising and AdSense for Content systems. He is also a co-designer and co-implementor of Google's distributed computing infrastructure, including the MapReduce, BigTable and Spanner systems, protocol buffers, the open-source TensorFlow system for machine learning, and a variety of internal and external libraries and developer tools.



Jeff received a Ph.D. in Computer Science from the University of Washington in 1996, working with Craig Chambers on whole-program optimization techniques for object-oriented languages. He received a B.S. in computer science & economics from the University of Minnesota in 1990. He is a member of the National Academy of Engineering, and of the American Academy of Arts and Sciences, a Fellow of the Association for Computing Machinery (ACM), a Fellow of the American Association for the Advancement of Sciences (AAAS), and a winner of the ACM Prize in Computing.

**Keynote on Friday, May 17
9AM, Grand Ballroom**

**Enlisting the Public to Build a Healthier Web Information Commons
Claire Wardle, *TED Fellow***

Abstract: Over the past three years, platforms, governments and a plethora of nonprofit initiatives have prioritized fighting online misinformation through a variety of different means. Yet the current framework is too fragmented to deliver global results. The big tech platforms have data, but no public accountability. Governments (mostly) have democratic legitimacy, but little information on what is actually going on in the platforms they're itching to regulate. And nonprofit initiatives too often lack the scale to affect change at the level needed. What if we came up with a dramatically new deliberative process that involves a global community of concerned citizens ready to share information and participate in consultations to improve collective decision-making? What if a more accountable, diverse and verifiable web were still possible?

Biography: Claire is a TED fellow working on a new participatory project aimed at building an information commons where people can reliably find factual information that serves their needs, hold accountable those who create or disseminate content for mass consumption and ensure available knowledge is more representative of the global community. Claire also leads the strategic direction and research for First Draft and is the co-founder of one of First Draft's founding partners, Eyewitness Media Hub. Before First Draft, she was the Research Director at the Tow Center for Digital Journalism at Columbia University Graduate School of Journalism. She was also head of social media for the United Nations Refugee Agency and Director of News Services for Storyful. She is one of the world's experts on user-generated content, and has led substantial research projects—with an emphasis on qualitative research methodologies—investigating how UGC is handled by news organizations. She was a member of the World Economic Forum's Global Agenda Council on the Future of Information and Entertainment. She holds a PhD in Communications from the University of Pennsylvania.



Keynote

The Law of the Horse at 20: Phases of the Net **Lawrence Lessig, *Professor at Harvard Law School***

Abstract: The Internet moves in phases, and we are entering the third in 20 years. In this keynote, using a framework drawn from the Law of the Horse,^{*} I describe the phase we are entering — the surveillance phase — and the threat it presents to society generally, and democracy in particular. Along the way, I offer an understanding of the Net circa 1999, and the phase that followed it, circa 2009. At each stage, our inability to govern has been a significant liability. In the phase we are entering, it will be devastating.

Biography: Lawrence Lessig is the Roy L. Furman Professor of Law and Leadership at Harvard Law School. Prior to returning to Harvard, he taught at Stanford Law School, where he founded the Center for Internet and Society, and at the University of Chicago. He clerked for Judge Richard Posner on the 7th Circuit Court of Appeals and Justice Antonin Scalia on the USA Supreme Court. Lessig is a founding board member of Creative Commons and serves on the Scientific Board of AXA Research Fund. A member of the American Academy of Arts and Sciences and the American Philosophical Association, he has received numerous awards including a Webby, the Free Software Foundation's Freedom Award, Scientific American 50 Award, and Fastcase 50 Award. Cited by The New Yorker as “the most important thinker on intellectual property in the Internet era,” Lessig has focused much of his career on law and technology, especially as it affects copyright. His current work addresses “institutional corruption”—relationships which, while legal, weaken public trust in an institution—especially as that affects democracy.



His books include: *Fidelity & Constraint: How the Supreme Court Has Read the American Constitution* (2019), *America, Compromised* (2018), *Republic, Lost v2* (2015), *Republic, Lost: How Money Corrupts Congress—and a Plan to Stop It* (2011), *Remix: Making Art and Commerce Thrive in the Hybrid Economy* (2008), *Code v2* (2006), *The Future of Ideas* (2001), and *Code and Other Laws of Cyberspace* (1999). Lessig holds a BA in economics and a BS in management from the University of Pennsylvania, an MA in philosophy from Cambridge University, and a JD from Yale.

Note: Sadly, this keynote had to be cancelled due to a last minute family emergency.

^{*} Lawrence Lessig. The Law of the Horse: What Cyberlaw Might Teach, *Harvard Law Review* 113, 501-549, 1999.



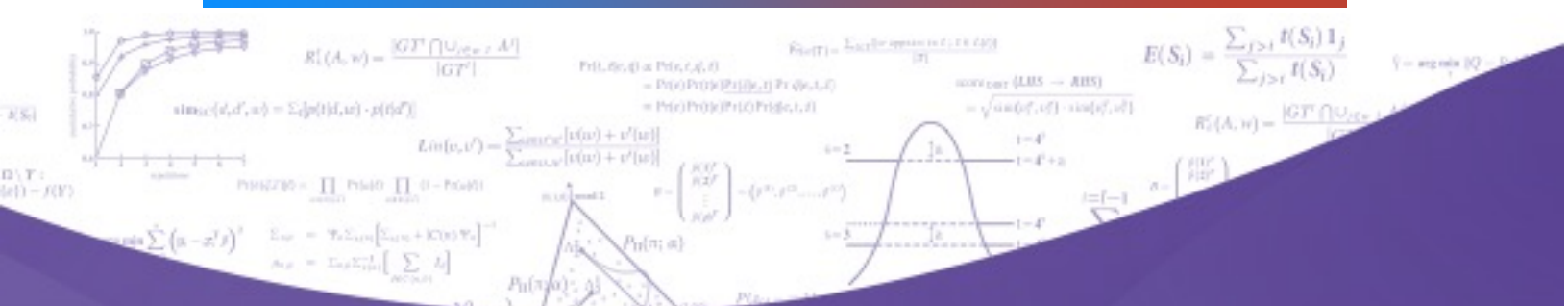
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Panel on 30 Years of the Web, Friday May 17 4PM, Grand Ballroom

The Web was invented in 1989, deployed in 1990 and exploded in 1993 with the first generic browser, Mosaic. Then we had Netscape followed by the first web search engine and the Internet bubble. Later the semantic Web and social networks appeared, among many other technologies, leading to the current Web, which thanks to digital advertising has many free services. But, is this sustainable? Can we foresee the future or we should be more concerned about building it?

Panelists:

Robert Cailliau, *formerly at CERN, Switzerland*

Jaime Teevan, *Chief Research Scientist, Microsoft, USA*

TBA

Moderator:

Tom Samsonite, *WIRED, USA*



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Recommendations

Research and development of the next generation of core algorithms for recommendation, personalization, and search that is central to our member experience, as well as solving challenges in new areas such as messaging, promotions, and image selection.

Content

Helping to shape our catalog of movies and TV shows. We seek to design a better path for our members, predict the value of specific content, characterize member tastes around the world, and learn characteristics that make content successful.

Studio

Optimizing the production of original movies and TV shows. Netflix's rapidly growing global footprint makes being a top producer of high quality and differentiated content essential.

Streaming

Optimizing video and audio encoding, adaptive bitrate selection, and content delivery. Netflix's global footprint makes being a top provider of high quality content essential.

Advertising

Research on advertising placement, channeling, and user targeting to be central to our member experience when watching Netflix.

Machine Learning Platform

Research on the underlying machine learning foundation. We have used TensorFlow, PyTorch, and other frameworks to build our own machine learning platform, and create scalable machine learning systems that are easy to use.

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More about Jobs & Culture at Netflix: jobs.netflix.com/culture
Reach out any time at research@netflix.com

DiDi at WWW 2019

Papers

- Efficient Ridesharing Order Dispatching with Mean Field Multi-Agent Reinforcement Learning
Minne Li, Zhiwei Qin, Yan Jiao, Yaodong Yang, Zhichen Gong, Jun Wang, Chenxi Wang, Guobin Wu, Jieping Ye
- Domain Generation Algorithms Detection through Deep Neural Network and Ensemble
Shuaiji Li, Tao Huang, Zhiwei Qin, Fangfang Zhang, Yinhong Chang

GAIA Open Dataset

The GAIA initiative aims to establish strong links between DiDi and academia, and facilitate data-driven research in transportation. It provides a platform for academia to access anonymized data from real-life urban scenarios. Please visit <https://outreach.didichuxing.com/research/opendata/en/> for more information.

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Special Tracks

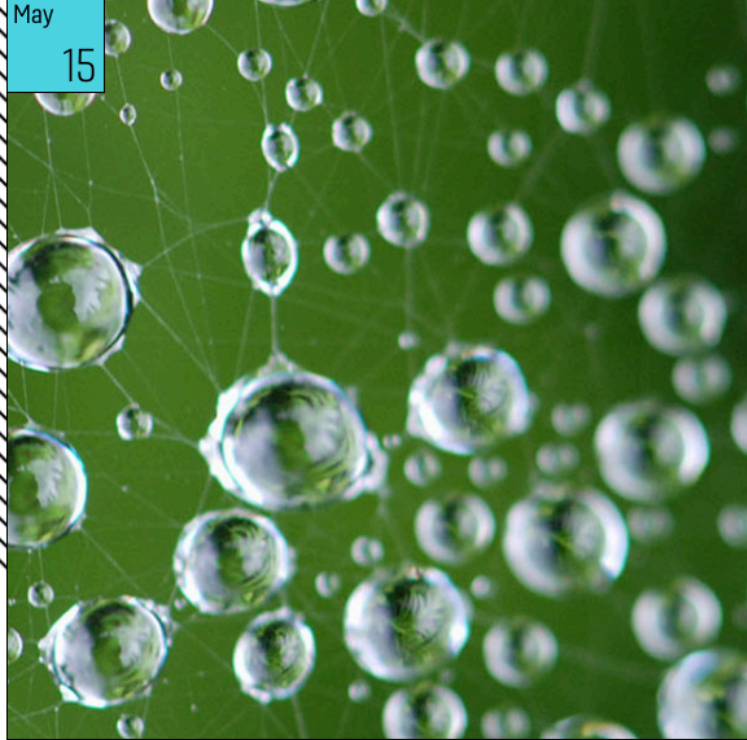
May
14



BIG

The BIG Track at the Web Conference 2019 will provide a forum to hear the latest innovations

May
15



The Web of Health

Exploring new opportunities to improve our health and the delivery of medicine

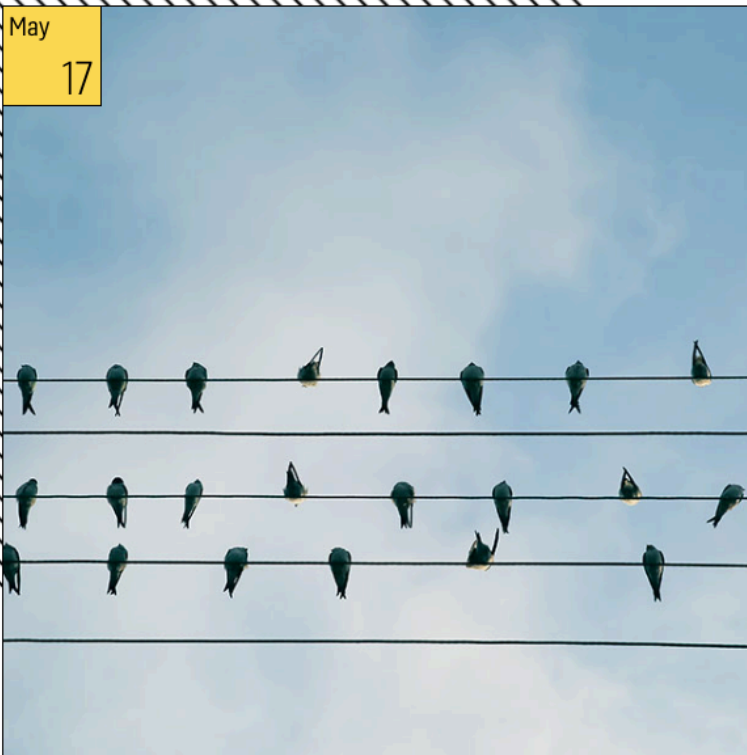
May
16



The Future of the Open Web

The future of the Open Web in three ways: open-source software, open science, and open platforms


May
17




Designing an Ethical Web

the role of technical design on human rights, current efforts and pressing challenges, and visions for building a more just and ethical web.

Collocated Events

	<p>Web4All A premiere venue for accessibility research</p>
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	<p>W3C The standards of the Web are born here</p>
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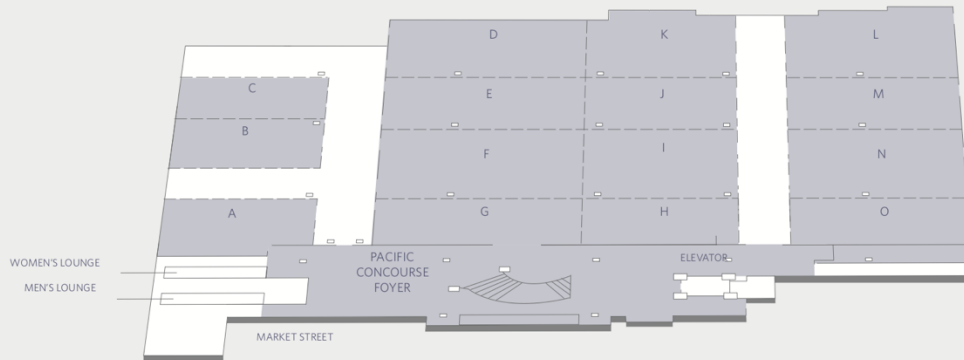
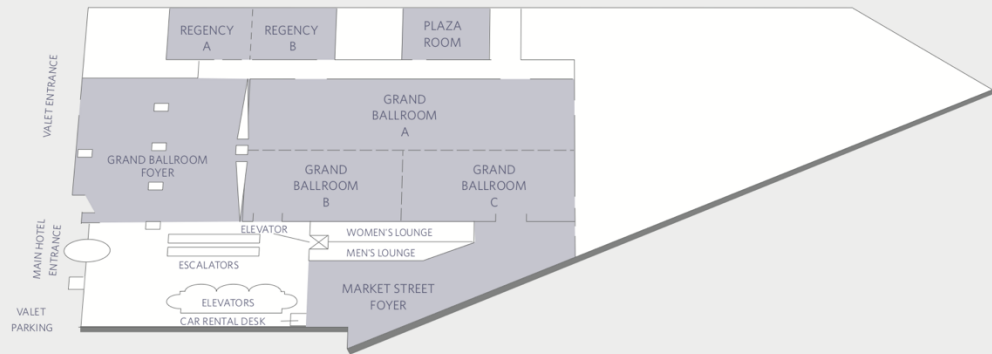
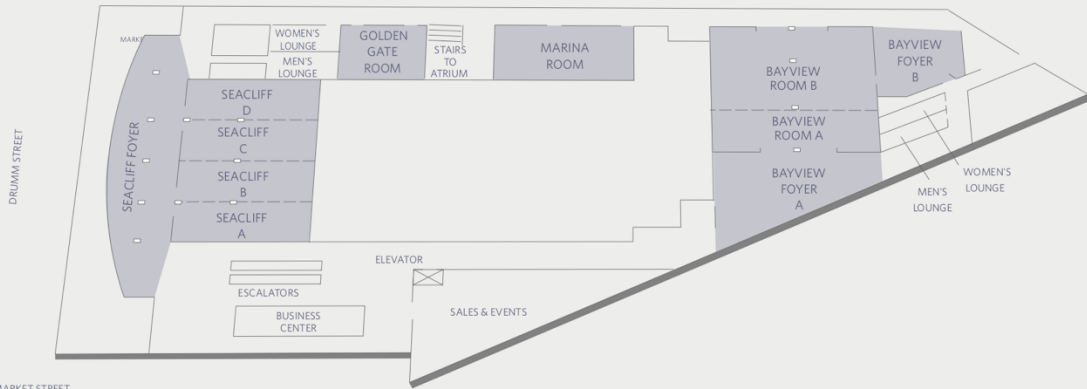
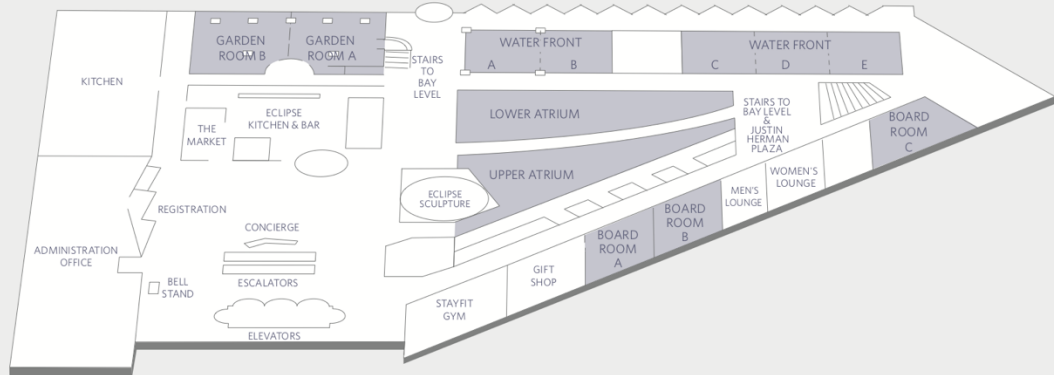
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Personal Notes

Venue & Floors Plan

Hyatt Regency Hotel San Francisco
5 Embarcadero Center
San Francisco, CA 94111
415-788-1234

FLOOR PLAN
 3-D Levels



Registration

The registration desk at the conference will be in the Grand Ballroom Foyer (the space to your left when you enter the venue from Drumm St.). The hours of operation are below:

Sunday	16:00 to 19:00
Monday	8:00 to 19:30
Tuesday	7:00 to 17:00
Wednesday	7:30 to 17:00
Thursday	7:30 to 17:00
Friday	7:30 to 17:00

At check-in, you will receive your name badge along with the Welcome Reception ticket (if your ticket includes Monday) and lunch tickets. Name badges are required for admittance to ANY conference functions, including the sessions, meals, and networking opportunities, so please be sure to wear them at all times. Replacing it will cost \$50.

Wireless Internet

Complimentary wireless Internet will be provided in all meeting spaces at the Hyatt Regency San Francisco. Use the WiFi network **TheWebConf** with password **web4good**.

Social Media

Use the following handles to join the conference conversation on social media today!

FOLLOW [@TheWebConf](#) on Twitter

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LIKE [@The-Web-Conference](#) on LinkedIn

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Social Events

Coffee Breaks: Every day between 10:30AM and 11AM as well as between 3:30PM and 4PM at Pacific Concourse

Come down to the bottom floor and enjoy the exhibition with the booths of our sponsors.

Food Truck Lunches: Every Day between 1:30PM and 2PM at Embarcadero Plaza

We will be in one of the nicest areas of San Francisco and we have planned a long lunch hour outside of the hotel for you to be able to get out and enjoy the weather and company of colleagues. Lunch will be served at Embarcadero Plaza and you can sample local cuisine from local food trucks. Please bring a reusable water bottle; in order to promote sustainability, San Francisco does not allow the sale of plastic water bottles.

Reception: Monday 13 at 6PM, Atrium Foyer at Hyatt Embarcadero

After you pick up your conference badge at the registration desk, head over to the Atrium Foyer for the opening reception if it is included in your registration (you will receive two tickets for drinks). This will be your opportunity to see old colleagues and meet new ones in a social setting.

Dinner: Wednesday 15 at 7PM, Exploratorium, Pier 15

We expect a night of filled with good food, friendships, and play in the science exhibitions in the Exploratorium. The dress code remains casual or business casual for this event.

Directions (less than 15 minutes):

Leave the Hyatt Regency heading Left (East on Market St. toward the Ferry Building)

Cross the Embarcadero and turn Left (North)

Walk along Embarcadero for approximately .5 mi/.8 km to Pier 15



Conference Townhall: Thursday 16 at 6PM, Garden A+B at Hyatt Embarcadero

Join IW3C2 members and the organizers of the past, present, and future Web Conference to discuss the state of the conference series and brainstorm about areas to improve.

Important notice: Badges and/or tickets are required for these events. If you plan on attending, please stop by the Conference Registration Desk onsite if you have any doubts.

Weather and Dress Code

We expect a beautiful weather during the week of the conference: primarily sunny or partly cloudy. Temperatures in mid-May average between a high of 63° F (17° C) and a low of 50° F (10° C). Rain in this season is rare. We will be next to the water which means there will be breeze and sometimes mild winds. Please plan for this.

If this is your first time attending the Web Conference, please be aware that there is no dress code for the conference. The majority of the attendees wear casual or smart casual clothing while some (especially among invited speakers and keynotes) may choose to wear business casual. Business formal is less frequently used. If you are a student on the job market, please consult with your advisor, and good luck! ☺ Be sure to use a jacket, sweater, or dress in layered clothing, as temperatures may fluctuate within the conference rooms and outside when windy.

Local Attractions

Make sure you review the [tips for excursions](#) while in San Francisco (see website). On top of those recommendations, there are long lists of places to check out and experiences to have while you are in San Francisco.

Check out https://en.wikivoyage.org/wiki/San_Francisco for more information.

Medical and Emergency

Emergency Number

From a cell phone or external phone, dial 911. While inside the hotel, you can call 0 from any phone in the hotel which will get you directly to the Hotel Security Dispatch Center. You should inform a Hyatt Regency Hotel Staff member of any medical emergencies.

Nearest Pharmacies

CVS

approximately .3 miles away
351 California Street
San Francisco, CA 94104
Phone: 415-398-2578
Store Number: 7657
Pharmacy Hours:
M-F: 8am-7pm
Saturday- 10am-5pm
Sunday- Closed

Local Hospital

St Francis Memorial Hospital
approximately 1.4 miles away
900 Hyde Street,
San Francisco ,CA 94109

Walgreens

approximately 492 ft away
33 Drumm Street
San Francisco, CA 94111
Phone: 415-989-6116
Store Number: 94111
Pharmacy Hours:
M-F: 8:30am-6:30pm
Saturday- Closed
Sunday- Closed

Nearest Urgent Care

Dignity Health- GoHealth Urgent Care
approximately .7 miles away
170 Columbus Ave Suite #110
San Francisco, CA 94133

Safety Tips

San Francisco earns its rightful place as a traveler favorite thanks to its natural beauty, cultural offerings, and thriving food scene. However, the conference is in a major urban city and crimes of opportunity do happen. Here are some safety tips to ensure you have a great time!

- Review tips at https://en.wikivoyage.org/wiki/San_Francisco#Stay_safe
- Do not leave your belongings/badge unattended even in the hotel's meeting rooms.
- When off the hotel grounds/events, please do not wear your badge in public.
- Exercise caution if you are walking alone, especially at night.
- Like many major cities around the world, San Francisco has a homeless population. Most homeless people are harmless; however, some street people are chronic law violators who may infringe upon the rights of others. Demonstrate a combination of respect and caution around panhandlers and strangers. If you feel inclined to financially assist someone in need, it is suggested that contributions not be given to individuals on the street, but rather to one of the many charitable organizations that address such needs.
(from <https://www.sftravel.com/article/tips-attendees>)
- Don't bring a car, if you can help it, parking can get expensive. San Francisco is an easy to get around city using hired cars and public transportation.
- Carry your wallet in the inside front pocket of your pants or your jacket. In a restaurant, keep your purse in your lap, not over the back of the chair.



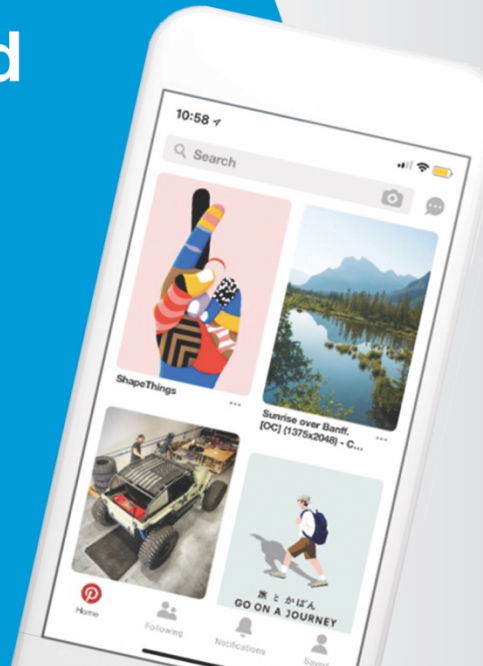
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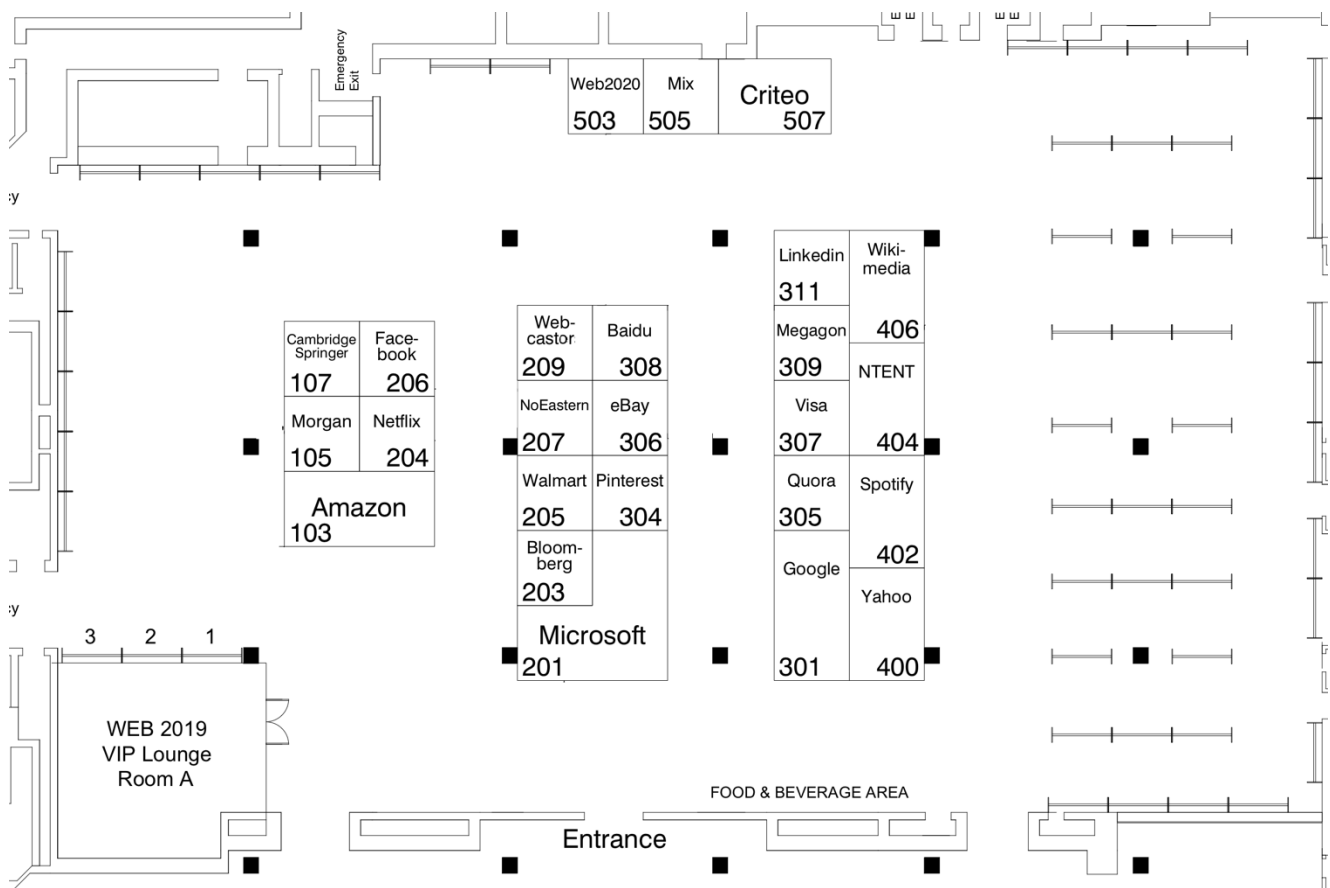
Let's do
something big



Exhibition – Tuesday to Friday, May 14-17 Pacific Concourse

The exhibition is open from 10AM to 5:30PM except the last day when finishes at 1PM. In this area coffee breaks will be served and posters and demos will be presented. There will be a VIP room reserved for the conference organization, keynote speakers and invited speakers of the four special tracks. The booths location of the sponsors are below followed by a map of the Pacific Concourse.

Amazon	103	Morgan & Claypool	105
Baidu	308	Netflix Research	204
Bloomberg Engineering	203	NTENT	404
Cambridge University Press	107	Pinterest	304
Criteo AI Lab	507	Quora	305
eBay	306	Spotify	402
Facebook	206	Springer	107
Google	301	The Web Conference 2020	503
Khoury College of CS, Northeastern University	207	Visa Research	307
LinkedIn	311	Walmart Labs	205
Megagon Labs	309	Wikimedia Foundation	406
Microsoft	201	Webcastor	207
Mix	505	Yahoo Research	400



Conference Schedule

Monday, May 13 - Morning

9:00-12:30	Web4All	Ballroom C	Volker Sorge, Elaine Pearson
9:00-12:30	Emoji 2019: 2nd International Workshop on Emoji Understanding and Applications in Social Media	Waterfront A	Sanjaya Wijeratne, Horacio Saggion, and Amit Sheth
9:00-12:30	10th International Workshop on Mining, Modeling and Learning from Social Media (MSM 2019)	Bayview A	Martin Atzmueller, Alvin Chin, and Christoph Trattner
9:00-12:30	International Workshop on Deep Learning for Graphs and Structured Data Embedding (DL4G-SDE)	Bayview B	Ling Chen, Yuxiao Dong, Bin Li, Fragkiskos D. Malliaros, Jie Tang, Michalis Vazirgiannis, Hui Xiong
9:00-12:30	5th AW4city – Workshop on Enhancing Urban Mobility with Web Applications	Waterfront B	Leonidas Anthopoulos, Marijn Janssen, and Vishanth Weerakkody
9:00-12:30	Workshop on Linked Data on the Web and its Relationship to Distributed Ledgers (LDOW/LDDL)	Board Room B	Maribel Acosta, Tim Berners-Lee, Stefan Dietze, Anastasia Dimou, John Domingue, Luis Ibanez-Gonzalez, Krzysztof Janowicz, Maria-Esther Vidal, Amrapali Zaveri
9:00-12:30	CyberSafety 2019: The Fourth Workshop on Computational Methods in Online Misbehavior	Pacific M	Homa Hosseinmardi, Srijan Kumar, Qin Lv, Neil Shah, and Richard Han
9:00-12:30	Workshop on Knowledge Graph Technology and Applications	Grand Ballroom B	Huajun Chen, Ying Ding, Laura Dietz, Wendy Hall, James Hendler, Deborah McGuinness, Edgar Meij, Sam Molyneux, Varish Mulwad, Raghava Mutharaju, Jeff Z. Pan, Xiang Ren, Jie Tang, Alex Wade, Mengting Wan, Chenyan Xiong, Min Zhang
9:00-12:30	HumBL: Workshop on Augmenting Intelligence with Bias-aware Humans-in-the-Loop	Regency A+B	Lora Aroyo, Alessandro Checco, Gianluca Demartini, Ujwal Gadiraju, Anna Lisa Gentile, Cristina Sarasua, Oana Inel
9:00-12:30	The Practice of Labeling: everything you always wanted to know about labeling	Seacliff C	Omar Alonso
9:00-12:30	Deep Chit-Chat: Deep Learning for Chatbots	Seacliff A+B	Wei Wu and Rui Yan
9:00-12:30	Sequence-aware Recommender Systems	Garden A	Paolo Cremonesi, Massimo Quadrana and Dietmar Jannach
9:00-12:30	Scalable Subgraph Counting: The Methods Behind The Madness	Seacliff D	Comandur Seshadhri and Srikanta Tirthapura
9:00-12:30	Cloud Economics	Marina Room	Ian Kash
9:00-12:30	Designing Equitable Algorithms for the Web	Pacific L	Ricardo Baeza-Yates and Sharad Goel
12:30-14:00	Food truck lunch	Embarcadero Plaza	Badge and ticket needed

Note: Tutorials are highlighted in grey and the detailed program for Web4All is available at <http://www.w4a.info/2019/programme/>

Conference Schedule

Monday, May 13 - Afternoon

14:00-17:30	Web4All	Ballroom C	Volker Sorge, Elaine Pearson
14:00-17:30	CyberSafety 2019: The Fourth Workshop on Computational Methods in Online Misbehavior	Pacific M	Homa Hosseinmardi, Srijan Kumar, Qin Lv, Neil Shah, and Richard Han
14:00-17:30	Workshop on Knowledge Graph Technology and Applications	Grand Ballroom B	Huajun Chen, Ying Ding, Laura Dietz, Wendy Hall, James Hendler, Deborah McGuinness, Edgar Meij, Sam Molyneux, Varish Mulwad, Raghava Mutharaju, Jeff Z. Pan, Xiang Ren, Jie Tang, Alex Wade, Mengting Wan, Chenyan Xiong, Min Zhang
14:00-17:30	HumBL: Augmenting Intelligence with Bias-aware Humans-in-the-Loop	Regency A+B	Lora Aroyo, Alessandro Checco, Gianluca Demartini, Ujwal Gadiraju, Anna Lisa Gentile, Cristina Sarasua, Oana Inel
14:00-17:30	Workshop on the Intersection of Machine Learning and Mechanism Design	Garden A	Ronny Lempel and Aranyak Mehta
14:00-17:30	Women in Web Data Science	Seacliff D	Ana Paula Appel, Marisa Vasconcelos, Francesca Spezzano, and Célia Talma Gonçalves
14:00-17:30	Workshop on Hypermedia Multi-Agent Systems (HyperAgents)	Waterfront B	Simon Mayer, Andrei Ciortea, Fabien Gandon, and Olivier Boissier
14:00-17:30	Ninth International Workshop on Location and the Web (LocWeb 2019)	Marina Room	Dirk Ahlers, Erik Wilde, Rossano Schifanella, and Jalal Alowibdi
14:00-17:30	Workshop on Linked Data on the Web and its Relationship to Distributed Ledgers (LDOW/LDDL)	Board Room B	Maribel Acosta, Tim Berners-Lee, Stefan Dietze, Anastasia Dimou, John Domingue, Luis Ibanez-Gonzalez, Krzysztof Janowicz, Maria-Esther Vidal, Amrapali Zaveri
14:00-17:30	9th Temporal Web Analytics Workshop (TempWeb) Special session and panel on Web Preservation	Waterfront A	Marc Spaniol, Ricardo Baeza-Yates, and Julien Masanes
14:00-17:30	A/B Testing at Scale: Accelerating Software Innovation	Garden B	Somit Gupta, Ronny Kohavi, Alex Deng, Jeff Omhover and Pawel Janowski
14:00-17:30	Crowdsourcing Inclusivity: Dealing with diversity of opinions, perspectives and ambiguity in annotated data - The CrowdTruth Tutorial	Bayview A	Lora Aroyo, Anca Dumitrache, Oana Inel, Zoltán Szilávik, Benjamin Timmermans and Chris Welty
14:00-17:30	Socially Responsible NLP	Seacliff C	Yulia Tsvetkov, Vinodkumar Prabhakaran and Rob Voigt
14:00-17:30	Concept to Code: Deep Learning for Fashion Recommendation	Bayview B	Omprakash Sonie, Muthusamy Chelliah and Shamik Sural
14:00-17:30	Economic Theories of Distributive Justice for Fair Machine Learning	Pacific L	Krishna Gummadi and Hoda Heidari
14:00-17:30	Modeling and Mining Feature-Rich Networks	Seacliff A+B	Rushed Kanawati and Martin Atzmueller
18:00-20:00	Welcome reception	Atrium Foyer	Badge and tickets needed

Note: Tutorials are highlighted in grey and the detailed program for Web4All is available at <http://www.w4a.info/2019/programme/>

Conference Schedule

Tuesday, May 14 - Morning

9:00-12:30	Web4All	Ballroom C	Volker Sorge, Elaine Pearson
9:00-12:30	SAD 2019: Workshop on Subjectivity, Ambiguity and Disagreement on the Web	Waterfront E	Christopher Welty, Anca Dumitrache, Alex Quinn, Olivia Rhinehart, Mike Schaeckermann, and Michael Tseng
9:00-12:30	Search-Oriented Conversational AI (SCAI)	Seacliff A	Julia Kiseleva, Jeff Dalton, Aleksandr Chuklin, and Mikhail Burtsev
9:00-12:30	9th Temporal Web Analytics Workshop	Waterfront A	Marc Spaniol, Ricardo Baeza-Yates, and Julien Masanes
9:00-12:30	6th Wiki Workshop	Seacliff D	Miriam Redi, Robert West, and Dario Taraborelli
9:00-10:30	Workshop on Data Science for Social Good	Garden B	Natalia Adler, Ciro Cattuto, Daniela Paolotti, Michele Tizzoni, Stefaan Verhulst, and Andrew Young
9:30-12:30	10th Latin American Web Congress	Marina Room	Altigran da Silva and Barbara Poblete
9:00-12:30	Attention from Neuroscience to the Web and Wellbeing	Waterfront C	Vidhya Navalpakkam and Laurent Itti
9:00-12:30	International Workshop on Misinformation, Computational Fact-Checking, and Credible Web	Seacliff C	Laks V.S. Lakshmanan, Chengkai Li, and Paolo Papotti
9:00-12:30	Workshop on Fairness, Accountability, Transparency, Ethics and Society on the Web	Seacliff B	Chiara Renso, Daniel Sadoc Menasché, Jonice Oliveira, Livia Ruback, Carlos Castillo, and Jeanna Matthews
9:00-12:30	ECNLP: First Workshop on e-Commerce and NLP	Pacific L	Shervin Malmasi, Eugene Agichtein, Oleg Rokhlenko, Ido Guy, and Nicola Ueffing
9:00-12:30	The Challenge of API Management: API Strategies for Decentralized Landscapes	Board Room B	Erik Wilde and Mike Amundsen
9:00-12:30	Online User Engagement: Metrics and Optimization	Seacliff A	Liangjie Hong and Mounia Lalmas
9:00-10:30	Continuous Analytics of Web Streams	Golden Gate	Riccardo Tommasini, Robin Keskisärkkä, Jean-Paul Calbimonte, Eva Blomqvist, Emanuele Della Valle and Albert Bifet
9:00-12:30	From Research Articles to Knowledge Graphs: Methods for ontology-driven knowledge base creation from text	Pacific M	Vayianos Pertsas and Panos Constantopoulos
9:00-12:30	Representation Learning on Networks: Theories, Algorithms, and Applications	Grand Ballroom B	Jie Tang and Yuxiao Dong
9:00-12:30	Human Mobility from theory to practice: Data, Models and Applications	Regency A+B	Filippo Simini, Gianni Barlacchi, Luca Pappalardo, Roberto Pellungrini
9:00-10:30	Social audience, under the influence	Waterfront B	Augustin Chaintreau, Arthi Ramachandran and Elissa Redmiles
9:00-12:30	Fairness-Aware Machine Learning: Practical Challenges and Lessons Learned	Garden A	Sarah Bird, Ben Hutchinson, Krishnaram Kenthapadi, Emre Kiciman and Margaret Mitchell
12:30-14:00	Lunch	Embarcadero Plaza	The PhD Consortium will have lunch at Pacific O (by invitation)

Note: Tutorials are highlighted in grey and the PhD Consortium room is given in the lunch row.

Conference Schedule

Tuesday, May 14 - Afternoon

14:00-17:30	Web4All	Ballroom C	Volker Sorge, Elaine Pearson
14:00-17:30	SAD 2019: Workshop on Subjectivity, Ambiguity and Disagreement on the Web	Waterfront E	Christopher Welty, Anca Dumitrache, Alex Quinn, Olivia Rhinehart, Mike Schaeckermann, and Michael Tseng
14:00-17:30	6th Wiki Workshop	Seacliff D	Miriam Redi, Robert West, and Dario Taraborelli
16:00-17:30	Workshop on Data Science for Social Good	Garden B	Natalia Adler, Ciro Cattuto, Daniela Paolotti, Michele Tizzoni, Stefaan Verhulst, and Andrew Young
14:00-17:30	Managing the Evolution and Preservation of the Data Web (MEPDaW)	Waterfront A	Javier D. Fernández, Jeremy Debattista, Fabrizio Orlandi, and Maria-Esther Vidal
14:00-17:30	10th Latin American Web Congress (LA-WEB)	Marina Room	Altigran da Silva and Barbara Poblete
14:00-17:30	Attention from Neuroscience to the Web and Wellbeing	Waterfront C	Vidhya Navalpakkam and Laurent Itti
14:00-17:30	International Workshop on Misinformation, Computational Fact-Checking, and Credible Web	Seacliff C	Laks V.S. Lakshmanan, Chengkai Li, and Paolo Papotti
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14:00-17:30	The Challenge of API Management: API Strategies for Decentralized API Landscapes	Board Room B	Erik Wilde and Mike Amundsen
14:00-17:30	Representation Learning on Networks: Theories, Algorithms, and Applications	Grand Ballroom B	Jie Tang and Yuxiao Dong
14:00-17:30	Human Mobility from theory to practice: Data, Models and Applications	Regency A+B	Filippo Simini, Gianni Barlacchi, Luca Pappalardo, Roberto Pellungrini
14:00-17:30	Social audience, under the influence	Waterfront B	Augustin Chaintreau, Arthi Ramachandran and Elissa Redmiles
14:00-17:30	Privacy-preserving Data Mining in Industry	Pacific M	Krishnaram Kenthapadi, Ilya Mironov and Abhradeep Thakurta
14:00-17:30	Explainable Recommendation and Search	Garden A	Yongfeng Zhang, Jiaxin Mao and Qingyao Ai

Note: Tutorials are highlighted in grey and the the detailed program for Web4All is available at <http://www.w4a.info/2019/programme/>

Conference Schedule

BIG - Special Track – Tuesday, May 14

Bayview A+B

9:00-9:10	Vanja Josifovski (Airbnb), Liane Lewin-Eytan (Amazon Research)	Opening remarks
9:10-10:00	Eugene Agichtein (Emory University)	Reimagining Conversational Search with Voice-Enabled Devices
10:00-10:30	Hema Raghavan (LinkedIn)	Driving Network Growth at LinkedIn: Past, Present and Future
11:00-11:30	Mihajlo Grbovic (Airbnb)	Machine Learning-Powered Search Ranking of Airbnb Experiences
11:30-12:20	Panelists: George Azzari (Atlas AI), Ed Chi (Google), Elizabeth Goodman (18F), Dave Thau (WWF) Moderator: Alex Jaimes (Dataminr)	Panel: BIG Public Data for Social Good: Opportunities and Technical Challenges
14:00-14:50	Mounia Lalmas (Spotify)	Recommending and Searching: Research @ Spotify
15:00-15:30	Jure Leskovec (Pinterest and Stanford University)	Graph Neural Networks for Reasoning over Multimodal Content
16:00-16:30	Panos Iperiotis (New York University and Detectica)	Detecting Misconduct and Malfeasance within Financial Institutions
16:30-17:00	Suju Rajan (Criteo)	Recommender Systems in a RTB Platform
17:00-17:30	Edgar Meij (Bloomberg)	Understanding News Using the Bloomberg Knowledge Graph
17:30-17:40	Vanja Josifovski (Airbnb), Liane Lewin-Eytan (Amazon Research)	Closing remarks

Personal Notes

Conference Schedule

Wednesday, May 15

8:30 - 9:00 **Opening Ceremony:** Conference Chairs & PC Chairs (Ballroom A+B+C)

Includes the presentation of the conference and the ceremony for the Test of Time Award presented by the IW3C2 Chair.

9:00-10:00 **Keynote:** Deep Learning for Solving Important Problems

Jeff Dean, Google (Ballroom A+B+C)

Chair: Ricardo Baeza-Yates (NTENT & Northeastern University)

10:30-12:30 **Research Track:** Fairness, Credibility and Search (Seacliff A+B+C)

Chair: Carlos Castillo (Universitat Pompeu Fabra, Spain)

Auditing the Partisanship of Google Search Snippets

Desheng Hu (Northeastern University, USA); Shan Jiang (Northeastern University, USA); Ronald E. Robertson (Northeastern University, USA); Christo Wilson (Northeastern University, USA)

It's Almost Like They're Trying to Hide It: How User-Provided Image Descriptions Have Failed to Make Twitter Accessible

Cole Gleason (Carnegie Mellon University, USA); Patrick Carrington (Carnegie Mellon University, USA); Cameron Cassidy (Texas A&M University, USA); Meredith Ringel Morris (Microsoft, USA); Kris M. Kitani (Carnegie Mellon University, USA); Jeffrey P. Bigham (Carnegie Mellon University, USA)

(Mis)Information Dissemination in WhatsApp: Gathering, Analyzing and Countermeasures

Gustavo Resende (Universidade Federal de Minas Gerais, Brazil); Philippe Melo (Universidade Federal de Minas Gerais, Brazil); Hugo Sousa (Universidade Federal de Minas Gerais, Brazil); Johnatan Messias (Max Planck Institute for Software Systems, Germany); Marisa Vasconcelos (IBM, Brazil); Jussara Almeida (Universidade Federal de Minas Gerais, Brazil); Fabrício Benevenuto (Universidade Federal de Minas Gerais, Brazil)

What Happened? The Spread of Fake News Publisher Content During the 2016 Election

Ceren Budak (University of Michigan, USA)

Forecasting U.S. Domestic Migration Using Internet Search Queries

Allen Yilun Lin (Northwestern University, USA); Justin Cranshaw (Microsoft, USA); Scott Counts (Microsoft, USA)

10:30-12:30 **Research Track:** Network Algorithms (Grand Ballroom B)

Chair: Paolo Boldi (Università degli Studi di Milano, Italy)

Estimating Walk-Based Similarities Using Random Walk

Shogo Murai (University of Tokyo, Japan); Yuichi Yoshida (National Institute of Informatics, Japan)

Multilevel Network Alignment

Si Zhang (Arizona State University, USA); Hanghang Tong (Arizona State University, USA); Ross Maciejewski (Arizona State University, USA); Tina Eliassi-Rad (Northeastern University, USA)

Adversarial Training Methods for Network Embedding

Quanyu Dai (Hong Kong Polytechnic University, China); Xiao Shen (Hong Kong Polytechnic University, China); Liang Zhang (JD.com, China); Qiang Li (Y-Lab - Kwai, China); Dan Wang (Hong Kong Polytechnic University, China)

NetSMF: Large-Scale Network Embedding as Sparse Matrix Factorization

Jiezhong Qiu (Tsinghua University, China); Yuxiao Dong (Microsoft, USA); Hao Ma (Facebook, USA); Jian Li (Tsinghua University, China); Chi Wang (Microsoft, USA); Kuansan Wang (Microsoft, USA); Jie Tang (Tsinghua University, China)

Sensitivity Analysis of Centralities on Unweighted Networks

Shogo Murai (University of Tokyo, Japan); Yuichi Yoshida (National Institute of Informatics, Japan)

10:30-12:30 **Research Track:** Recommendation (Grand Ballroom C)

Chair: Mihajlo Grbovic (Airbnb, US)

Improving Outfit Recommendation with Co-supervision of Fashion Generation

Yujie Lin (Shandong University, China); Pengjie Ren (University of Amsterdam, Netherlands); Zhumin Chen (Shandong University, China); Zhaochun Ren (JD.com, China); Jun Ma (Shandong University, China); Maarten de Rijke (University of Amsterdam, Netherlands)

Multi-Task Feature Learning for Knowledge Graph Enhanced Recommendation

Hongwei Wang (Shanghai Jiao Tong University, China); Fuzheng Zhang (Meituan-Dianping, China); Miao Zhao (Hong Kong Polytechnic University, Hong Kong); Wenjie Li (Hong Kong Polytechnic University, Hong Kong); Xing Xie (Microsoft, China); Minyi Guo (Shanghai Jiao Tong University, China)

Cross-domain Recommendation Without Sharing User-Relevant Data

Chen Gao (Tsinghua University, China); Xiangning Chen (Tsinghua University, China); Fuli Feng (National University of Singapore, Singapore); Kai Zhao (Tsinghua University, China); Xiangnan He (National University of Singapore, Singapore); Yong Li (Tsinghua University, China); Depeng Jin (Tsinghua University, China)

GhostLink: Mining Latent Influence Networks for Influence-aware Item Recommendation

Subhabrata Mukherjee (Amazon, USA); Stephan Guennemann (Technical University of Munich, Germany)

Multimodal Review Generation for Recommender Systems

Quoc-Tuan Truong (Singapore Management University, Singapore); Hady Lauw (Singapore Management University, Singapore)

10:30-12:30 **Research Track:** Security (Grand Ballroom A)

Chair: Ashish Kundu (IBM Research, US)

Evaluating Login Challenges as a Defense Against Account Takeover

Periwinkle Doerfler (New York University, USA); Kurt Thomas (Google, USA); Maija Marincenko (Google, USA); Juri Ranieri (Google, USA); Yu Jiang (Google, USA); Angelika Moscicki (Google, USA); Damon McCoy (New York University, USA)

Hack for Hire: Exploring the Emerging Market for Account Hijacking

Ariana Mirian (University of California San Diego, USA); Joe DeBlasio (University of California San Diego, USA); Stefan Savage (University of California San Diego, USA); Geoffrey M. Voelker (University of California San Diego, USA); Kurt Thomas (Google, USA)

Measurement and Early Detection of Third-Party Application Abuse on Twitter

Shehroze Farooqi (University of Iowa, USA); Zubair Shafiq (University of Iowa, USA)

Doppelgängers on the Dark Web: A Large-scale Assessment on Phishing Hidden Web Services

Changhoon Yoon (Korea Advanced Institute of Science and Technology, South Korea); Kwanwoo Kim (Korea Advanced Institute of Science and Technology, South Korea); Yongdae Kim (Korea Advanced Institute of Science and Technology, South Korea); Seungwon Shin (Korea Advanced Institute of Science and Technology, South Korea); Soeul Son (Korea Advanced Institute of Science and Technology, South Korea)

Auditing Offline Data Brokers via Facebook's Advertising Platform

Giridhari Venkatadri (Northeastern University, USA); Piotr Sapiezynski (Northeastern University, USA); Elissa M. Redmiles (University of Maryland, USA); Alan Mislove (Northeastern University, USA); Oana Goga (Laboratoire d'Informatique de Grenoble, France); Michelle L. Mazurek (University of Maryland, USA); Krishna P. Gummadi (Max Planck Institute for Software Systems, Germany)

10:30-12:30 **Research Track:** Knowledge Synthesis (Bayview A+B)

Chair: Lora Aroyo (Vrije Universiteit Amsterdam, Netherlands)

Link Prediction on N-ary Relational Data

Saiping Guan (Chinese Academy of Sciences, China); Xiaolong Jin (Chinese Academy of Sciences, China); Yuanzhuo Wang (Chinese Academy of Sciences, China); Xueqi Cheng (Chinese Academy of Sciences, China)

ActiveLink: Deep Active Learning for Link Prediction in Knowledge Graphs

Natalia Ostapuk (University of Fribourg, Switzerland); Jie Yang (University of Fribourg, Switzerland); Philippe Cudre-Mauroux (University of Fribourg, Switzerland)

Joint Entity Linking with Deep Reinforcement Learning

Zheng Fang (Chinese Academy of Sciences, China); Yanan Cao (Chinese Academy of Sciences, China); Qian Li (University of Technology Sydney, Australia); Dongjie Zhang (Chinese Academy of Sciences, China); Zhenyu Zhang (Chinese Academy of Sciences, China); Yanbing Liu (Chinese Academy of Sciences, China)

Be Concise and Precise: Synthesizing Open-domain Entity Descriptions from Facts

Rajarshi Bhowmik (Rutgers University, USA); Gerard de Melo (Rutgers University, USA)

Iteratively Learning Embeddings and Rules for Knowledge Graph Reasoning

Wen Zhang (Zhejiang University, China); Bibek Paudel (University of Zurich, Switzerland); Liang Wang (Zhejiang University, China); Jiaoyan Chen (University of Oxford, UK); Hai Zhu (Alibaba Group, China); Wei Zhang (Alibaba Group, China); Abraham Bernstein (University of Zurich, Switzerland); Huajun Chen (Zhejiang University, China)

12:30-14:00 **Food Truck Lunch:** Embarcadero Plaza

14:00-15:30 **Poster Session:** Research Track, **Demos** and **PhD Symposium** (Pacific Concourse)

Chairs: Ashton Anderson (U of Toronto), Joe DeBlasio (Google), Reza Zafarani (Syracuse University)

Estimating the Total Volume of Queries to Google

Fabrizio Lillo (University of Bologna, Italy); Salvatore Ruggieri (University of Pisa, Italy)

A Multimodal Text Matching Model for Obfuscated Language Identification in Adversarial Communication

Longtao Huang (Chinese Academy of Sciences, China); Ting Ma (Chinese Academy of Sciences, China); Junyu Lin (Chinese Academy of Sciences, China); Jizhong Han (Chinese Academy of Sciences, China); Songlin Hu (Chinese Academy of Sciences, China)

Fuzzy Multi-task Learning for Hate Speech Type Identification

Han Liu (Cardiff University, UK); Pete Burnap (Cardiff University, UK); Wafa Alorainy (Cardiff University, UK); Matthew Williams (Cardiff University, UK)

Modeling Relational Drug-Target-Disease Interactions via Tensor Factorization with Multiple Web Sources

Huiyuan Chen (Case Western Reserve University, USA); Jing Li (Case Western Reserve University, USA)

Neural Multimodal Belief Tracker with Adaptive Attention for Dialogue Systems

Zheng Zhang (Tsinghua University, China); Lizi Liao (National University of Singapore, Singapore); Minlie Huang (Tsinghua University, China); Xiaoyan Zhu (Tsinghua University, China); Tat-Seng Chua (National University of Singapore, Singapore)

FARE: Diagnostics for Fair Ranking using Pairwise Error Metrics

Caitlin Kuhlman (Worcester Polytechnic Institute, USA); Maryann Vanvalkenburg (Worcester Polytechnic Institute, USA); Elke Rundensteiner (Worcester Polytechnic Institute, USA)

Unbiased LambdaMART: An Unbiased Pairwise Learning-to-Rank Algorithm

Ziniu Hu (University of California Los Angeles, USA); Yang Wang (Bytedance AI Lab, China); Qu Peng (Bytedance AI Lab, China); Hang Li (Bytedance AI Lab, China)

Is Yelp Actually Cleaning Up the Restaurant Industry? A Re-Analysis on the Relative Usefulness of Consumer Reviews

Kristen M. Altenburger (Stanford University, USA); Daniel E. Ho (Stanford Law School, USA)

Self- and Cross-Excitation in StackExchange Question & Answer Communities

Tiago Santos (Graz University of Technology, Austria); Simon Walk (Detego GmbH, Austria); Roman Kern (Know-Center GmbH, Austria); Markus Strohmaier (GESIS - Leibniz-Institute for the Social Sciences and RWTH Aachen University, Germany); Denis Helic (Graz University of Technology, Austria)

Dressing as a Whole: Outfit Compatibility Learning Based on Node-wise Graph Neural Networks

Zeyu Cui (Chinese Academy of Sciences, China); Zekun Li (Chinese Academy of Sciences, China); Shu Wu (Chinese Academy of Sciences, China); Xiao-Yu Zhang (Chinese Academy of Sciences, China); Liang Wang (Chinese Academy of Sciences, China)

Adversarial Training Methods for Network Embedding

Quanyu Dai (Hong Kong Polytechnic University, China); Xiao Shen (Hong Kong Polytechnic University, China); Liang Zhang (JD.com, China); Qiang Li (Y-Lab - Kwai, China); Dan Wang (Hong Kong Polytechnic University, China)

NetSMF: Large-Scale Network Embedding as Sparse Matrix Factorization

Jiezhong Qiu (Tsinghua University, China); Yuxiao Dong (Microsoft, USA); Hao Ma (Facebook, USA); Jian Li (Tsinghua University, China); Chi Wang (Microsoft, USA); Kuansan Wang (Microsoft, USA); Jie Tang (Tsinghua University, China)

GhostLink: Mining Latent Influence Networks for Influence-aware Item Recommendation

Subhabrata Mukherjee (Amazon, USA); Stephan Guennemann (Technical University of Munich, Germany)

The Monopolistic Auction and Bitcoin's Fee Market

Ron Lavi (Technion - Israel Institute of Technology, Israel); Or Sattath (Hebrew University of Jerusalem, Israel); Aviv Zohar (Hebrew University of Jerusalem, Israel)

Aggregating E-commerce Search Results from Heterogeneous Sources via Hierarchical Reinforcement Learning

Ryuichi Takanobu (Tsinghua University, China); Tao Zhuang (Alibaba Group, China); Minlie Huang (Tsinghua University, China); Jun Feng (State Grid, China); Haihong Tang (Alibaba Group, China); Bo Zheng (Alibaba Group, China)

Place Deduplication with Embeddings

Carl Yang (University of Illinois Urbana-Champaign, USA); Huy Hoang Do (Facebook, USA); Tomas Mikolov (Facebook, USA); Jiawei Han (University of Illinois Urbana-Champaign, USA)

Signed Distance-based Deep Memory Recommender

Thanh Tran (Worcester Polytechnic Institute, USA); Xinyue Liu (Worcester Polytechnic Institute, USA); Kyumin Lee (Worcester Polytechnic Institute, USA); Xiangnan Kong (Worcester Polytechnic Institute, USA)

Semi-Supervised Graph Classification: A Hierarchical Graph Perspective

Jia Li (Chinese University of Hong Kong, Hong Kong); Yu Rong (Tencent AI Lab, China); Hong Cheng (Chinese University of Hong Kong, Hong Kong); Helen Meng (Chinese University of Hong Kong, Hong Kong); Wenbing Huang (Tencent AI Lab, China); Junzhou Huang (Tencent AI Lab, China)

Multimodal Review Generation for Recommender Systems

Quoc-Tuan Truong (Singapore Management University, Singapore); Hady Lauw (Singapore Management University, Singapore)

Neural IR Meets Graph Embedding: A Ranking Model for Product Search

Yuan Zhang (Peking University, China); Dong Wang (Peking University, China); Yan Zhang (Peking University, China)

Dealing with Interdependencies and Uncertainty in Multi-Channel Advertising Campaigns Optimization

Alessandro Nuara (Politecnico di Milano, Italy); Nicola Sosio (Politecnico di Milano, Italy); Francesco Trovò (Politecnico di Milano, Italy); Maria Chiara Zaccardi (Politecnico di Milano, Italy); Nicola Gatti (Politecnico di Milano, Italy); Marcello Restelli (Politecnico di Milano, Italy)

Learning Resolution Parameters for Graph Clustering

Nate Veldt (Purdue University, USA); David Gleich (Purdue University, USA); Anthony Wirth (University of Melbourne, Australia)

Exploiting Ratings, Reviews and Relationships for Item Recommendations in Topic Based Social Networks
Pengfei Li (Zhejiang University, China); Hua Lu (Aalborg University, Denmark); Gang Zheng (Zhejiang University, China); Qian Zheng (Nanyang Technological University, Singapore); Long Yang (Zhejiang University, China); Gang Pan (Zhejiang University, China)

Spectrum-enhanced Pairwise Learning to Rank
Wenhui Yu (Tsinghua University, China); Zheng Qin (Tsinghua University, China)

Evaluating Login Challenges as a Defense Against Account Takeover
Periwinkle Doerfler (New York University, USA); Kurt Thomas (Google, USA); Maija Marincenko (Google, USA); Juri Ranieri (Google, USA); Yu Jiang (Google, USA); Angelika Moscicki (Google, USA); Damon McCoy (New York University, USA)

Nonlinear diffusions for community detection and semi-supervised learning
Rania Ibrahim (Purdue University, USA); David Gleich (Purdue University, USA)

Multilevel Network Alignment
Si Zhang (Arizona State University, USA); Hanghang Tong (Arizona State University, USA); Ross Maciejewski (Arizona State University, USA); Tina Eliassi-Rad (Northeastern University, USA)

Hack for Hire: Exploring the Emerging Market for Account Hijacking
Ariana Mirian (University of California San Diego, USA); Joe DeBlasio (University of California San Diego, USA); Stefan Savage (University of California San Diego, USA); Geoffrey M. Voelker (University of California San Diego, USA); Kurt Thomas (Google, USA)

Persona-Aware Tips Generation
Piji Li (Tencent AI Lab, China); Zihao Wang (Chinese University of Hong Kong, China); Lidong Bing (Alibaba Group, China); Wai Lam (Chinese University of Hong Kong, China)

Local Matching Networks for Engineering Diagram Search
Zhuyun Dai (Carnegie Mellon University, USA); Zhen Fan (Tsinghua University, China); Hafeezul Rahman (Carnegie Mellon University, USA); Jamie Callan (Carnegie Mellon University, USA)

Improved Cross-Lingual Question Retrieval for Community Question Answering
Andreas Rücklé (TU Darmstadt, Germany); Krishnkant Swarnkar (TU Darmstadt, Germany); Iryna Gurevych (TU Darmstadt, Germany)

Stereotypical Bias Removal for Hate Speech Detection Task using Knowledge-based Generalizations
Pinkesh Badjatiya (International Institute of Information Technology Hyderabad, India); Manish Gupta (International Institute of Information Technology Hyderabad, India); Vasudeva Varma (International Institute of Information Technology Hyderabad, India)

Heterographic Pun Recognition via Pronunciation and Spelling Understanding Gated Attention Network
Yufeng Diao (Dalian University of Technology, China); Hongfei Lin (Dalian University of Technology, China); Liang Yang (Dalian University of Technology, China); Xiaochao Fan (Dalian University of Technology, China); Di Wu (Dalian University of Technology, China)

What We Vote for? Answer Selection from User Expertise View in Community Question Answering
Shanshan Lyu (Chinese Academy of Sciences, China); Wentao Ouyang (Chinese Academy of Sciences, China); Yongqing Wang (Chinese Academy of Sciences, China); Huawei Shen (Chinese Academy of Sciences, China); Xueqi Cheng (Chinese Academy of Sciences, China)

Predicting pregnancy using large-scale data from a women's health tracking mobile application
Bo Liu (Stanford University, USA); Shuyang Shi (Stanford University, USA); Yongshang Wu (Stanford University, USA); Daniel Thomas (Clue by BioWink GmbH, Germany); Laura Symul (Stanford University, USA); Emma Pierson (Stanford University, USA); Jure Leskovec (Stanford University, USA)

Measurement and Early Detection of Third-Party Application Abuse on Twitter
Shehroze Farooqi (University of Iowa, USA); Zubair Shafiq (University of Iowa, USA)

Joint Entity Linking with Deep Reinforcement Learning
Zheng Fang (Chinese Academy of Sciences, China); Yanan Cao (Chinese Academy of Sciences, China); Qian Li (University of Technology Sydney, Australia); Dongjie Zhang (Chinese Academy of Sciences, China); Zhenyu Zhang (Chinese Academy of Sciences, China); Yanbing Liu (Chinese Academy of Sciences, China)

Before and After GDPR: The Changes in Third Party Presence at Public and Private European Websites
Jannick Sørensen (Aalborg University, Denmark); Sokol Kosta (Aalborg University, Denmark)

RED: Redundancy-Driven Data Extraction from Result Pages

Jinsong Guo (UBS Evidence Lab, UK); Valter Crescenzi (Universita Roma Tre, Italy); Tim Furche (University of Oxford and Wrapidity & Meltwater, UK); Giovanni Grasso (University of Calabria, Italy; Wrapidity & Meltwater, UK); Georg Gottlob (University of Oxford, UK; TU Wien, Austria)

Message Distortion in Information Cascades

Manoel Horta Ribeiro (Universidade Federal de Minas Gerais, Brazil); Kristina Gligoric (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Robert West (Ecole Polytechnique Fédérale de Lausanne, Switzerland)

User-Centric Quality-Sensitive Training! Social Advertisement Generation by Leveraging User Click Behavior

Yongzhen Wang (Dalian Maritime University, China); Heng Huang (Alibaba Group, China); Yuliang Yan (Alibaba Group, China); Xiaozhong Liu (Indiana University Bloomington, USA)

Cross-domain Recommendation Without Sharing User-relevant Data

Chen Gao (Tsinghua University, China); Xiangning Chen (Tsinghua University, China); Fuli Feng (National University of Singapore, Singapore); Kai Zhao (Tsinghua University, China); Xiangnan He (National University of Singapore, Singapore); Yong Li (Tsinghua University, China); Depeng Jin (Tsinghua University, China)

Automatic Boolean Query Refinement for Systematic Review Literature Search

Harrisen Scells (University of Queensland, Australia); Guido Zuccon (University of Queensland, Australia); Bevan Koopman (CSIRO, Australia)

SGranite: Distributed Tensor Decomposition for Large Scale Health Analytics

Huan He (Emory University, USA); Jette Henderson (University of Texas Austin, USA); Joyce C Ho (Emory University, USA)

Revisiting Mobile Advertising Threats with MAdLife

Gong Chen (Georgia Institute of Technology, USA); Wei Meng (Chinese University of Hong Kong, Hong Kong); John Copeland (Georgia Institute of Technology, USA)

Doppelgängers on the Dark Web: A Large-scale Assessment on Phishing Hidden Web Services

Changhoon Yoon (Korea Advanced Institute of Science and Technology, South Korea); Kwanwoo Kim (Korea Advanced Institute of Science and Technology, South Korea); Yongdae Kim (Korea Advanced Institute of Science and Technology, South Korea); Seungwon Shin (Korea Advanced Institute of Science and Technology, South Korea); Soel Son (Korea Advanced Institute of Science and Technology, South Korea)

A Hybrid BitFunnel and Partitioned Elias-Fano Inverted Index

Xinyu Liu (Nankai University, China); Zhaohua Zhang (Nankai University, China); Rebecca Stones (Nankai University, China); Yusen Li (Nankai University, China); Gang Wang (Nankai University, China); Xiaoguang Liu (Nankai University, China)

Leveraging Peer Communication to Enhance Crowdsourcing

Wei Tang (Washington University Saint Louis, USA); Ming Yin (Purdue University, USA); Chien-Ju Ho (Washington University Saint Louis, USA)

Detecting Low Self-Esteem in youths from Web Search Data

Anis Zaman (University of Rochester, USA); Rupam Acharyya (University of Rochester, USA); Henry Kautz (University of Rochester, USA); Vincent Silenzio (University of Rochester, USA)

Domain-aware Neural Model for Sequence Labeling using Joint Learning

Huang Heng (Alibaba Group, China); Liu Xiaozhong (Alibaba Group, China); Yuliang Yan (Alibaba Group, China)

Rating Worker Skills and Task Strains in Collaborative Crowd Computing: A Competitive Perspective

George Trimponias (Huawei Noah's Ark Lab, Hong Kong); Xiaojuan Ma (Hong Kong University of Science and Technology, Hong Kong); Qiang Yang (Hong Kong University of Science and Technology, Hong Kong)

Understanding Reader Backtracking Behavior in Online News Articles

Uzi Smadja (Technion - Israel Institute of Technology, Israel); Max Grusky (Cornell Tech, USA); Yoav Artzi (Cornell Tech, USA); Mor Naaman (Cornell Tech, USA)

End-to-end Entity Matching using Pre-trained Deep Models

Chen Zhao (University of Maryland, USA); Yeye He (Microsoft, USA)

Mobile App Risk Ranking via Exclusive Sparse Coding

Deguang Kong (Yahoo Research, USA); Lei Cen (Purdue University, USA)

BaG: Behavior-aware Group Detection in Crowded Urban Spaces using WiFi Probes

Jiaxing Shen (Hong Kong Polytechnic University, Hong Kong); Jiannong Cao (Hong Kong Polytechnic University, Hong Kong); Xuefeng Liu (Huazhong University of Science and Technology, China)

Global Vectors for Node Representation

Robin Brochier (DSRT, France); Adrien Guille (Université Lumière Lyon 2, France); Julien Velcin (Université de Lyon 2, France)

It's almost like they're trying to hide it: How User-Provided Image Descriptions Have Failed to Make Twitter Accessible

Cole Gleason (Carnegie Mellon University, USA); Patrick Carrington (Carnegie Mellon University, USA); Cameron Cassidy (Texas A&M University, USA); Meredith Ringel Morris (Microsoft, USA); Kris M. Kitani (Carnegie Mellon University, USA); Jeffrey P. Bigham (Carnegie Mellon University, USA)

Understanding the Evolution of Mobile App Ecosystems: A Longitudinal Measurement Study of Google Play

Haoyu Wang (Beijing University of Posts and Telecommunications, China); Hao Li (OrangeAPK, China); Yao Guo (Peking University, China)

Iteratively Learning Embeddings and Rules for Knowledge Graph Reasoning

Wen Zhang (Zhejiang University, China); Bibek Paudel (University of Zurich, Switzerland); Liang Wang (Zhejiang University, China); Jiaoyan Chen (University of Oxford, UK); Hai Zhu (Alibaba Group, China); Wei Zhang (Alibaba Group, China); Abraham Bernstein (University of Zurich, Switzerland); Huajun Chen (Zhejiang University, China)

Jointly Leveraging Intent and Interaction Signals to Predict User Satisfaction with Slate Recommendations

Rishabh Mehrotra (Spotify Research, UK); Mounia Lalmas (Spotify Research, UK); Doug Kenney (Spotify, USA); Thomas Lim-Meng (Spotify, USA); Golli Hashemian (Spotify, USA)

Improving Outfit Recommendation with Co-supervision of Fashion Generation

Yujie Lin (Shandong University, China); Pengjie Ren (University of Amsterdam, Netherlands); Zhumin Chen (Shandong University, China); Zhaochun Ren (JD.com, China); Jun Ma (Shandong University, China); Maarten de Rijke (University of Amsterdam, Netherlands)

Citation Needed: A Taxonomy and Algorithmic Assessment of Wikipedia's Verifiability

Miriam Redi (Wikimedia Foundation, UK); Besnik Fetahu (L3S Research Center, Germany); Jonathan Morgan (Wikimedia Foundation, USA); Dario Taraborelli (Wikimedia Foundation, USA)

ActiveLink: Deep Active Learning for Link Prediction in Knowledge Graphs

Natalia Ostapuk (University of Fribourg, Switzerland); Jie Yang (University of Fribourg, Switzerland); Philippe Cudre-Mauroux (University of Fribourg, Switzerland)

TableNet: An approach for determining fine-grained relations for Wikipedia tables

Besnik Fetahu (L3S Research Center, Germany); Avishek Anand (L3S Research Center, Germany); Maria Koutraki (FIZ Karlsruhe, Germany)

SWAT: Seamless Web Authentication Technology

Florentin Rochet (UCLouvain Crypto Group, Belgium); Kyriakos Efthymiadis (VUB, Belgium); François Koeune (UCLouvain Crypto Group, Belgium); Olivier Pereira (UCLouvain Crypto Group, Belgium)

Growing Attributed Networks through Local Processes

Harshay Shah (University of Illinois Urbana-Champaign, USA); Suhansanu Kumar (University of Illinois Urbana-Champaign, USA); Hari Sundaram (University of Illinois Urbana-Champaign, USA)

Open World Learning for Product Classification

Hu Xu (University of Illinois Chicago, USA); Bing Liu (University of Illinois Chicago, USA); Lei Shu (University of Illinois Chicago, USA); Philip S. Yu (University of Illinois Chicago, USA)

Think Outside the Dataset: Finding Fraudulent Reviews using Cross-Dataset Analysis

Shirin Nilizadeh (University of Texas Arlington, USA); Hojjat Aghakhani (University of California Santa Barbara, USA); Eric Gustafson (University of California Santa Barbara, USA); Christopher Kruegel (University of California Santa Barbara, USA); Giovanni Vigna (University of California Santa Barbara, USA)

- Crowd-Mapping Urban Objects from Street-Level Imagery
Sihang Qiu (Delft University of Technology, Netherlands); Achilleas Psyllidis (Delft University of Technology, Netherlands); Alessandro Bozzon (Delft University of Technology, Netherlands); Geert-Jan Houben (Delft University of Technology, Netherlands)
- Auditing the Partisanship of Google Search Snippets
Desheng Hu (Northeastern University, USA); Shan Jiang (Northeastern University, USA); Ronald E. Robertson (Northeastern University, USA); Christo Wilson (Northeastern University, USA)
- Be Concise and Precise: Synthesizing Open-domain Entity Descriptions from Facts
Rajarshi Bhowmik (Rutgers University, USA); Gerard de Melo (Rutgers University, USA)
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Sneha Mehta (Virginia Tech, USA); M. Raihanul Islam (Virginia Tech, USA); Huzefa Rangwala (George Mason University, USA); Naren Ramakrishnan (Virginia Tech, USA)
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Giridhari Venkatadri (Northeastern University, USA); Piotr Sapiezynski (Northeastern University, USA); Elissa M. Redmiles (University of Maryland, USA); Alan Mislove (Northeastern University, USA); Oana Goga (Laboratoire d'Informatique de Grenoble, France); Michelle L. Mazurek (University of Maryland, USA); Krishna P. Gummadi (Max Planck Institute for Software Systems, Germany)
- Forecasting U.S. Domestic Migration Using Internet Search Queries
Allen Yilun Lin (Northwestern University, USA); Justin Cranshaw; Scott Counts (Microsoft, USA)
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Prasanna Umar (Pennsylvania State University, USA); Anna Squicciarini (Pennsylvania State University, USA); Sarah Rajtmajer (Pennsylvania State University, USA)
- Externalities and Fairness
Masoud Seddighin (Sharif University of Technology, Iran); Hamed Saleh (University of Maryland, USA); Mohammad Ghodsi (Sharif University of Technology, Iran)
- Constructing Test Collections using Multi-armed Bandits and Active Learning
Md Mustafizur Rahman (University of Texas Austin, USA); Mucahid Kutlu (TOBB University of Economics and Technology, Turkey); Matthew Lease (University of Texas Austin, USA)
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Nicole Immorlica (Microsoft, USA); Jieming Mao (University of Pennsylvania, USA); Christos Tzamos (University of Wisconsin-Madison, USA)
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Benjamin Fish (Microsoft, Canada); Ashkan Bashardoust (University of Utah, USA); danah boyd (Data & Society, USA); Sorelle Friedler (Haverford College, USA); Carlos Scheidegger (University of Arizona, USA); Suresh Venkatasubramanian (University of Utah, USA)
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Huyen Le (University of Iowa, USA); Raven Maragh (University of Iowa, USA); Brian Ekdale (University of Iowa, USA); Timothy Havens (University of Iowa, USA); Andrew High (University of Iowa, USA); Zubair Shafiq (University of Iowa, USA)
- (Mis)Information Dissemination in WhatsApp: Gathering, Analyzing and Countermeasures
Gustavo Resende (Universidade Federal de Minas Gerais, Brazil); Philippe Melo (Universidade Federal de Minas Gerais, Brazil); Hugo Sousa (Universidade Federal de Minas Gerais, Brazil); Johnnatan Messias (Max Planck Institute for Software Systems, Germany); Marisa Vasconcelos (IBM, Brazil); Jussara Almeida; Fabrício Benevenuto (Universidade Federal de Minas Gerais, Brazil)
- The few-get-richer: a surprising consequence of popularity-based rankings
Fabrizio Germano (Universitat Pompeu Fabra, Spain); Vicenç Gomez (Universitat Pompeu Fabra, Spain); Gael Le Mens (Universitat Pompeu Fabra, Spain)
- Knowledge-aware Assessment of Severity of Suicide Risk for Early Intervention
Manas Gaur (Kno.e.sis Center Ohio, USA); Amanuel Alambo (Kno.e.sis Center Ohio, USA); Joy Prakash Sain (Kno.e.sis Center Ohio, USA); Ugur Kursuncu (Kno.e.sis Center Ohio, USA); Krishnaprasad Thirunarayan (Kno.e.sis Center Ohio, USA); Ramakanth Kavuluru (University of Kentucky, USA); Amit Sheth (Kno.e.sis Center Ohio, USA); Randy Welton (Wright State University, USA); Jyotishman Pathak (Weill Cornell Medical College, USA)

A Scalable Hybrid Research Paper Recommender Platform for Microsoft Academic
Anshul Kanakia; Zhihong Shen; Darrin Eide; Kuansan Wang (Microsoft, USA)

Speed and Scale of Cryptocurrency Discussion Growth on Reddit
Maria Glenski (University of Notre Dame, USA); Emily Saldanha (Pacific Northwest National Laboratory, USA); Svitlana Volkova (Pacific Northwest National Laboratory, USA)

Personalized Online Spell Correction for Personal Search
Jai Gupta; Zhen Qin; Michael Bendersky; Donald Metzler (Google, USA)

Embarrassingly Shallow Autoencoders for Sparse Data
Harald Steck (Netflix, USA)

Topic Structure-Aware Neural Language Models
Noriaki Kawamae (NTT Comware, Japan)

Parametric Models for Intransitivity in Pairwise Rankings
Rahul Makhijani; Johan Ugander (Stanford University, USA)

What happened? The Spread of Fake News Publisher Content During the 2016 Election
Ceren Budak (University of Michigan, USA)

The Illusion of Change: Correcting for Bias when Inferring Changes in Sparse, Societal-Scale Data
Gabriel Cadamuro (University of Washington, USA); Ramya Korlakai Vinayak (University of Washington, USA); Joshua Blumenstock (University of California Berkeley, USA); Sham Kakade (University of Washington, USA); Jacob Shapiro (Princeton University, USA)

Maximizing Marginal Utility per Dollar for Economic Recommendation
Yingqiang Ge (Rutgers University, USA); Shuyuan Xu (Rutgers University, USA); Shuchang Liu (Rutgers University, USA); Shijie Geng (Rutgers University, USA); Zuohui Fu (Rutgers University, USA); Yongfeng Zhang (Rutgers University, USA)

City-Wide Signal Strength Maps: Prediction with Random Forests
Emmanouil Alimpertis (University of California Irvine, USA); Athina Markopoulou (University of California Irvine, USA); Carter Butts (University of California Irvine, USA); Konstantinos Psounis (University of Southern California, USA)

The World Wants Mangoes and Kangaroos: A Study of New Emoji Requests Based on Thirty Million Tweets
Yunhe Feng; Wenjun Zhou; Zheng Lu (University of Tennessee, USA); Zhibo Wang (Wuhan University, China); Qing Cao (University of Tennessee, USA)

Extracting Product Defects and Solutions from Online Reviews
Xuan Zhang (Virginia Tech, USA); Zhilei Qiao (University of Alabama Birmingham, USA); Aman Ahuja (Virginia Tech, USA); Weiguo Fan (University of Iowa, USA); Edward Fox (Virginia Tech, USA); Chandan K. Reddy (Virginia Tech, USA)

CnGAN: Generative Adversarial Networks for Cross-network user preference generation for non-overlapped users
Dilruk Perera; Roger Zimmermann (National University of Singapore, Singapore)

BoFGAN: Towards A New Structure of Backward-or-Forward Generative Adversarial Nets
M.K.Sophie Chen (Peking University, China); Xinyi Lin (Peking University, China); Chen Wei (Turing Robot, China); Rui Yan (Peking University, China)

Adaptive MAtRix Completion for the users and the items in tail
Mohit Sharma (Walmart Labs, USA); George Karypis (University of Minnesota, USA)

Enhancing Fashion Recommendation with Visual Compatibility Relationship
Ruiping Yin (Beijing Institute of Technology, China); Kan Li (Beijing Institute of Technology, China); Jie Lu; Guangquan Zhang (University of Technology Sydney, Australia)

Detect Rumors on Twitter by Promoting Information Campaigns with Generative Adversarial Learning
Jing Ma (Chinese University of Hong Kong, Hong Kong); Wei Gao (Victoria University of Wellington, New Zealand); Kam-Fai Wong (Chinese University of Hong Kong, Hong Kong)

Neural Chinese Named Entity Recognition via CNN-LSTM-CRF and Joint Training with Word Segmentation
Fangzhao Wu (Microsoft, China); Junxin Liu (Tsinghua University, China); Chuhan Wu (Tsinghua University, China); Yongfeng Huang (Tsinghua University, China); Xing Xie (Microsoft, China)

BOLT-K: Bootstrapping Ontology Learning via Transfer of Knowledge
Nikhita Vedula (Ohio State University, USA); Pranav Maneriker (Ohio State University, USA); Srinivasan Parthasarathy (Ohio State University, USA)

XFake: Explainable Fake News Detector with Visualizations

Fan Yang; Shiva Pentyala; Sina Mohseni; Mengnan Du; Hao Yuan; Rhema Linder; Eric Ragan; Shuiwang Ji; and Xia Hu

R2SIGTP: A Novel Real-Time Recommendation System with Integration of Geography and Temporal Preference for Next Point-of-Interest

Xu Jiao; Yingyuan Xiao; and Wenguang Zheng

CrowdPT: Summarizing Crowd Opinions as Professional Analyst

Chung-Chi Chen; Hen-Hsen Huang; Chia-Wen Tsai; and Hsin-Hsi Chen

QAnswer: A Question Answering prototype bridging the gap between the LOD and end-users

Dennis Diefenbach; Pedro Migliatti; Omar Qawasmeh; Vincent Lully; Kamal Singh; and Pierre Maret

Can You Give Me a Reason?: Argument-inducing Online Forum by Argument Mining

Makiko Ida; Gaku Morio; Kosui Iwasa; Takaki Yasui; Tomoyuki Tatsumi; and Katsuhide Fujita

TIM: A Tool for Gaining Insights into Psychotherapy

Ronan Cummins; Michael Ewbank; Alan Martin; Valentin Tablan; Ana Catarino; and Andrew Blackwell

Dixit: Interactive Visual Storytelling via Term Manipulation

Chao-Chun Hsu; Yu-Hua Chen; Zi-Yuan Chen; Hsin Yu Lin; Ting-Hao Huang; and Lun-Wei Ku

Querying Data Lakes using Spark and Presto

Mohamed Nadjib Mami; Damien Graux; Simon Scerri; and Sören Auer

GraviTIE: Exploratory Analysis of Large-Scale Heterogeneous Image Collections

Sean Yang; Luke Rodriguez; Jevin West; and Bill Howe

RecBoard: A Web-based Platform for Recommendation System Research and Development

Kriti Singh; Mohit Chawla; Longqi Yang; and Deborah Estrin

Interactive Visualisation Techniques for the Web of Data

Marie Destandau

Cores and Other Dense Structures in Complex Networks

Edoardo Galimberti

Data-Driven Edu Chatbots

Donya Rooein

Velocity on the Web

Riccardo Tommasini

Finding Themselves between Home and Host Cultures: The Use of Facebook by International Students

Lin Malone

Dynamics of Misinformation Cascades

Jasser Jasser

Representation Learning for Recommender Systems with Application to the Scientific Literature

Robin Brochier

Robust Detection of Cyberbullying in Social Media

Mengfan Yao

Extracting actionable information from Security Forums

Joobin Gharibshah

ClickGraph: Web Page Embedding using Clickstream Data for Multitask Learning

Porter Jenkins

Towards Better Entity Linking Evaluation

Henry Rosales-Méndez

Identification of the Source(s) of Misinformation Propagation Utilizing Identifying Codes

Kaustav Basu

Incorporation of System-Level Objectives into Recommender Systems

Himan Abdollahpour

16:00-17:40 **Research Track:** Knowledge Analysis and Querying (Bayview A+B)

Chair: Simon Razniewski (Max Planck Institute for Informatics, Germany)

Navigating the Maze of Wikidata Query Logs

Angela Bonifati (Lyon 1 University, France); Wim Martens (University of Bayreuth, Germany); Thomas Timm (University of Bayreuth, Germany)

SaGe: Web Preemption for Public SPARQL Query Services

Thomas Minier (University of Nantes, France); Hala Skaf-Molli (University of Nantes, France); Pascal Molli (University of Nantes, France)

How Representative is a SPARQL Benchmark? An Analysis of RDF Triplestore Benchmarks

Muhammad Saleem (University of Leipzig, Germany); Gábor Szárnyas (Budapest University of Technology and Economics, Hungary); Felix Conrads (Universität Leipzig, Germany); Syed Ahmad Chan Bukhari (Yale University, USA); Qaiser Mehmood (National University of Ireland Galway, Ireland); Axel-Cyrille Ngonga Ngomo (Paderborn University, Germany)

Google Dataset Search: Building a Search Engine for Datasets in an Open Web Ecosystem

Natasha Noy (Google, USA); Dan Brickley (Google, USA); Matthew Burgess (Google, USA)

16:00-17:36 **Research Track:** Communities, Complaints, and Collective Action (Grand Ballroom C)

Chair: Robert West (École Polytechnique Fédérale de Lausanne, Switzerland)

Who Watches the Watchmen: Exploring Complaints on the Web

Damilola Ibosiola (Queen Mary University of London, UK); Ignacio Castro (Queen Mary University of London, UK); Gianluca Stringhini (Boston University, USA); Steve Uhlig (Queen Mary University of London, UK); Gareth Tyson (Queen Mary University of London, UK)

Trajectories of Blocked Community Members: Redemption, Recidivism and Departure

Jonathan Chang (Cornell University, USA); Cristian Danescu-Niculescu-Mizil (Cornell University, USA)

“Data Strikes”: Evaluating the Effectiveness of New Forms of Collective Action Against Technology Platforms

Nicholas Vincent (Northwestern University, USA); Brent Hecht (Northwestern University, USA); Shilad Sen (Macalester College, USA)

A Dynamic Embedding Model of the Media Landscape

Jérémy Rappaz (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Dylan Bourgeois (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Karl Aberer (Ecole Polytechnique Fédérale de Lausanne, Switzerland)

16:00-17:36 **Research Track:** Network Applications (Grand Ballroom B)

Chair: Nadia Fawaz (LinkedIn, US)

Dual Graph Attention Networks for Deep Latent Representation of Multifaceted Social Effects in Recommender System

Qitian Wu (Shanghai Jiao Tong University, China); Hengrui Zhang (Shanghai Jiao Tong University, China); Xiaofeng Gao (Shanghai Jiao Tong University, China); Peng He (Tencent, China); Paul Weng (Shanghai Jiao Tong University, China); Han Gao (Tencent, China); Guihai Chen (Shanghai Jiao Tong University, China)

Anomaly Detection in the Dynamics of Web and Social Networks Using Associative Memory

Volodymyr Miz; Benjamin Ricaud; Kirell Benzi; Pierre Vandergheynst (Ecole Polytechnique Fédérale de Lausanne, Switzerland)

Spiders like Onions: On the Network of Tor Hidden Services

Massimo Bernaschi (Istituto per le Applicazioni del Calcolo Mauro Picone, Italy); Alessandro Celestini (Istituto per le Applicazioni del Calcolo Mauro Picone, Italy); Stefano Guarino (Istituto per le Applicazioni del Calcolo Mauro Picone, Italy); Flavio Lombardi (Istituto per le Applicazioni del Calcolo Mauro Picone, Italy); Enrico Mastrostefano (Istituto per le Applicazioni del Calcolo Mauro Picone, Italy)

Large-Scale Talent Flow Forecast with Dynamic Latent Factor Model

Le Zhang (University of Science and Technology of China, China); Hengshu Zhu (Baidu Talent Intelligence Center, China); Tong Xu (University of Science and Technology of China, China); Chen Zhu (Baidu Talent Intelligence Center, China); Chuan Qin (University of Science and Technology of China, China); Hui Xiong (Baidu Talent Intelligence Center, China); Enhong Chen (University of Science and Technology of China, China)

16:00-17:36 **Research Track:** Privacy and Trust (Grand Ballroom A)

Chair: Shirin Nilizadeh (University of Texas Arlington, US)

PrivIdEx: Privacy Preserving and Secure Exchange of Digital Identity Assets

Hasini Gunasinghe (Purdue University, USA); Ashish Kundu (IBM, USA); Elisa Bertino (Purdue University, USA); Hugo Krawczyk (IBM, USA); Suresh Chari (IBM, USA); Kapil Singh (IBM, USA); Dong Su (IBM, USA)

OUTGUARD: Detecting In-Browser Covert Cryptocurrency Mining in the Wild

Amin Kharraz (University of Illinois Urbana-Champaign, USA); Zane Ma (University of Illinois Urbana-Champaign, USA); Paul Murley (University of Illinois Urbana-Champaign, USA); Charles Lever (Georgia Institute of Technology, USA); Joshua Mason (University of Illinois Urbana-Champaign, USA); Andrew Miller (University of Illinois Urbana-Champaign, USA); Nikita Borisov (University of Illinois Urbana-Champaign, USA); Manos Antonakakis (Georgia Institute of Technology, USA); Michael Bailey (University of Illinois Urbana-Champaign, USA)

Evaluating Anti-Fingerprinting Privacy Enhancing Technologies

Amit Datta (Snap, USA); Jianan Lu (University of California Berkeley, USA); Michael Carl Tschantz (International Computer Science Institute, USA)

Anything to Hide? Studying Minified and Obfuscated Code in the Web

Philippe Skolka (TU Darmstadt, Germany); Cristian-Alexandru Staicu (TU Darmstadt, Germany); Michael Pradel (TU Darmstadt, Germany)

16:00-17:36 **Research Track:** Efficiency and Scalability (Seacliff A+B+C)

Chair: Fabrizio Silvestri (Facebook, UK)

Efficient On-Device Public-Private Computation

Alessandro Epasto (Google, USA); Hossein Esfandiari (Google, USA); Vahab Mirrokni (Google, USA)

RealGraph: A Graph Engine Leveraging the Power-Law Distribution of Real-World Graphs

Yong-Yeon Jo (Hanyang University, South Korea); Myung-Hwan Jang (Hanyang University, South Korea); Sang-Wook Kim (Hanyang University, South Korea); Sunju Park (Yonsei University, South Korea)

Predictive Crawling for Commercial Web Content

Shuguang Han (Google, USA); Bernhard Brodowsky (Google, Switzerland); Przemek Gajda (Google, Switzerland); Sergey Novikov (Google, Switzerland); Mike Bendersky (Google, USA); Marc Najork (Google, USA); Robin Dua (Google, USA); Alexandrin Popescul (Google, USA)

Towards Self-Adaptive Metric Learning On the Fly

Yang Gao (University of Texas Dallas, USA); Yi-Fan Li (University of Texas Dallas, USA); Swarup Chandra (University of Texas Dallas, USA); Latifur Khan (University of Texas Dallas, USA); Bhavani Thuraisingham (University of Texas Dallas, USA)

19:00-22:00 **Conference Dinner at Exploratorium, Pier 15**

See page 19 for instructions on how to walk from the hotel in less than 15 minutes. Dress warm as Exploratorium is on the bay shore.

Conference Schedule

Web of Health – Special Track - Wednesday, May 15

Garden A+B

10:30-10:35	Evgeniy Gabrilovich (Google), Nigam Shah (Stanford University)	Opening remarks
10:35-11:20	Kevin Schulman (Stanford)	Solving The Digital Transformation of Healthcare by 2025
11:30-11:50	Noemie Elhadad (Columbia University)	Scientists as Patients and Patients as Scientists
11:50-12:10	Tanzeem Choudhury (Cornell University and HealthRhythms)	BoostMeUp - Improving Cognitive Performance in the Moment by Unobtrusively Regulating Emotions
12:10-12:30	Maya Leventer-Roberts (Clalit Health Services)	Integrating Digital Health into Clinical Practice
14:00-14:45	<p>Panelists: Xavier Amatriain (Curai), Noemie Elhadad (Columbia University), Mitchell Feldman (Mass General Hospital), Saurabh Johri (Babylon Health), Maya Leventer-Roberts (Clalit Health Services)</p> <p>Moderator: Robert Harrington (Stanford University)</p>	Panel: How good is diagnosis on the Web
14:50-15:10	Tom Insel (Mindstrong Health)	Digital Phenotyping
15:10-15:30	Brian Loew (Inspire)	When small signals make big impact
16:00-16:20	Saurabh Johri (Babylon Health)	Making Healthcare Affordable & Accessible using AI and the Web
16:20-16:40	Xavier Amatriain (Curai)	Towards online universal quality healthcare through AI
16:45-17:30	Paul Markovich (Blue Shield of California)	Rebuilding healthcare delivery for California
17:30-18:30	Networking and discussion	

Conference Schedule

W3C Track – Collocated Event - Wednesday, May 15

Seacliff D

10:30 - 10:40	Chunming Hu (W3C / Beihang University)	Opening Remarks
10:40 - 11:10	Jeff Jaffe (W3C)	Innovative Standards for a New Web
11:10 - 11:40	Tab Atkins Jr (Google)	Houdini: The Future of CSS
11:40 - 12:10	Arnar Birgission, Google	Web Authentication for Web Applications
14:00 - 14:30	Pete Snyder (Brave Software)	Web Security & Privacy
14:30 - 15:00	Sandro Hawke (W3C)	Building a Credible Web — Fighting Misinformation with a Data Ecosystem
15:00 - 15:30	Andrew Shikiar (FIDO Alliance)	FIDO2: A Web without Passwords
16:00 - 16:30	Judy Zhu (Alibaba)	Mini App & Web
16:30 - 17:00	Ivan Herman (W3C)	Graph Data: RDF, Property Graphs
17:00 - 17:30	TBA	WebXR and Immersive Web
17:30 - 18:30		Networking and Discussion

More information can be found at <https://www.w3.org/2019/05/15-w3c-track/schedule.html>

Conference Schedule

Thursday, May 16

10:30-12:30 **Research Track:** Search (Grand Ballroom C)

Chair: Hang Li (Bytedance, Hong Kong)

Adversarial Sampling and Training for Semi-Supervised Information Retrieval

Dae Hoon Park (Huawei Research America, USA); Yi Chang (Jilin University, China)

Exploring User Behavior in Email Re-Finding Tasks

Joel Mackenzie (RMIT University, Australia); Kshitiz Gupta (Microsoft, USA); Fang Qiao (Microsoft, USA); Ahmed Hassan Awadallah (Microsoft, USA); Milad Shokouhi (Microsoft, USA)

Grid-based Evaluation Metrics for Web Image Search

Xiaohui Xie (Tsinghua University, China); Jiaxin Mao (Tsinghua University, China); Yiqun Liu (Tsinghua University, China); Maarten de Rijke (University of Amsterdam, Netherlands); Yunqiu Shao (Tsinghua University, China); Zixin Ye (Beihang University, China); Min Zhang (Tsinghua University, China); Shaoping Ma (Tsinghua University, China)

CoaCor: Code Annotation for Code Retrieval with Reinforcement Learning

Ziyu Yao (Ohio State University, USA); Jayavardhan Reddy Peddemail (Ohio State University, USA); Huan Sun (Ohio State University, USA)

Addressing Trust Bias for Unbiased Learning-to-Rank

Aman Agarwal (Cornell University, USA); Xuanhui Wang (Google, USA); Cheng Li (Google, USA); Michael Bendersky (Google, USA); Marc Najork (Google, USA)

10:30-12:30 **Research track:** Networks, Opinions, and Perceptions (Bayview A+B)

Chair: Aristides Gionis (Aalto University, Finland)

RAQ: Relationship-Aware Graph Querying in Large Networks

Jithin Vachery (Indian Institute of Technology Madras, India); Akhil Arora (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Sayan Ranu (Indian Institute of Technology Dehli, India); Arnab Bhattacharya (Indian Institute of Technology Kanpur, India)

Revisiting User Mobility and Social Relationships in LBSNs: A Hypergraph Embedding Approach

Dingqi Yang (University of Fribourg, Switzerland); Bingqing Qu (University of Fribourg, Switzerland); Jie Yang (University of Fribourg, Switzerland); Philippe Cudre-Mauroux (University of Fribourg, Switzerland)

Revisiting Opinion Dynamics with Varying Susceptibility to Persuasion via Non-Convex Local Search

T-H. Hubert Chan (University of Hong Kong, Hong Kong); Zhibin Liang (University of Hong Kong, Hong Kong); Mauro Sozio (Télécom ParisTech, France)

Judging a Book by Its Cover: The Effect of Facial Perception on Centrality in Social Networks

Dongyu Zhang (Dalian University of Technology, China); Teng Guo (Dalian University of Technology, China); Hanxiao Pan (Dalian University of Technology, China); Jie Hou (Dalian University of Technology, China); Zhitao Feng (Dalian University of Technology, China); Liang Yang (Dalian University of Technology, China); Hongfei Lin (Dalian University of Technology, China); Feng Xia (Dalian University of Technology, China)

A Semi-Supervised Active-learning Truth Estimator for Social Networks

Hang Cui (University of Illinois Urbana Champaign, USA); Tarek Abdelzaher (University of Illinois Urbana-Champaign, USA); Lance Kaplan (Army Research Laboratories, USA)

10:30-12:30 **Research track:** Personalization (Grand Ballroom A)

Chair: Mounia Lalmas (Spotify, UK)

Exploring Perceived Emotional Intelligence of Personality-Driven Virtual Agents in Handling User Challenges
Xiaojuan Ma (Hong Kong University of Science and Technology, Hong Kong); Emily Yang (Hong Kong University of Science and Technology, Hong Kong); Pascale Fung (Hong Kong University of Science and Technology, Hong Kong)

Listening Between the Lines: Learning Personal Attributes from Conversations
Anna Tigunova (Max Planck Institute for Informatics, Germany); Andrew Yates (Max Planck Institute for Informatics, Germany); Paramita Mirza (Max Planck Institute for Informatics, Germany); Gerhard Weikum (Max Planck Institute for Informatics, Germany)

Dual Neural Personalized Ranking
Seunghyeon Kim (Sungkyunkwan University, South Korea); Jongwuk Lee (Sungkyunkwan University, South Korea); Hyunjung Shim (Yonsei University, South Korea)

Dynamic Ensemble of Contextual Bandits to Satisfy Users' Changing Interests
Qingyun Wu (University of Virginia, USA); Huazheng Wang (University of Virginia, USA); Yanen Li (Snap, USA); Hongning Wang (University of Virginia, USA)

Quality Effects on User Preferences and Behaviors in Mobile News Streaming
Hongyu Lu (Tsinghua University, China); Min Zhang (Tsinghua University, China); Weizhi Ma (Tsinghua University, China); Yunqiu Shao (Tsinghua University, China); Yiqun Liu (Tsinghua University, China); Shaoping Ma (Tsinghua University, China)

10:30-12:30 **Research track:** Crowdsourcing and Human Computation (Seacliff A+B+C)

Chair: Omar Alonso (Microsoft, US)

Truth Inference at Scale: A Bayesian Model for Adjudicating Highly Redundant Crowd Annotations
Yuan Li (University of Melbourne, Australia); Benjamin I. P. Rubinstein (University of Melbourne, Australia); Trevor Cohn (University of Melbourne, Australia)

Privacy-Preserving Crowd-Sourcing of Web Searches with Private Data Donor
Vincent Primault (University College London, UK); Vasileios Lampos (University College London, UK); Ingemar Cox (University College London, UK); Emiliano De Cristofaro (University College London, UK)

Predicting ConceptNet Path Quality Using Crowdsourced Assessments of Naturalness
Yilun Zhou (Massachusetts Institute of Technology, USA); Steven Schockaert (Cardiff University, UK); Julie Shah (Massachusetts Institute of Technology, USA)

Generating Product Descriptions from User Reviews
Slava Novgorodov (eBay Research, Israel); Guy Elad (Technion - Israel Institute of Technology, Israel); Ido Guy (eBay Research, Israel); Kira Radinsky (Technion - Israel Institute of Technology, Israel)

A Human-in-the-loop Attribute Design Framework for Classification
Md Abdus Salam (University of Texas Arlington, USA); Mary E. Koone (University of Texas Arlington, USA); Saravanan Thirumuruganathan (Qatar Computing Research Institute, Qatar); Gautam Das (University of Texas Arlington, USA); Senjuti Basu Roy (New Jersey Institute of Technology, USA)

10:30-12:30 **Research track:** Text Classification and Relation Extraction (Grand Ballroom B)

Chair: Eugene Agichtein (Emory University, US)

A Family of Fuzzy Orthogonal Projection Models for Monolingual and Cross-lingual Hypernymy Prediction
Chengyu Wang (East China Normal University, China); Yan Fan (East China Normal University, China); Xiaofeng He (East China Normal University, China); Aoying Zhou (East China Normal University, China)

Classifying Extremely Short Texts by Exploiting Semantic Centroids in Word Mover's Distance Space
Changchun Li (Jilin University, China); Jihong Ouyang (Jilin University, China); Ximing Li (Jilin University, China)

From Small-scale to Large-scale Text Classification

Kang-Min Kim (Korea University, South Korea); Yeachan Kim (Korea University, South Korea); Jungho Lee (Korea University, South Korea); Ji-Min Lee (Korea University, South Korea); Sangkeun Lee (Korea University, South Korea)

Emoji-Powered Representation Learning for Cross-Lingual Sentiment Classification

Zhenpeng Chen (Peking University, China); Sheng Shen (University of California Berkeley, USA); Ziniu Hu (University of California Los Angeles, USA); Xuan Lu (Peking University, China); Qiaozhu Mei (University of Michigan, USA); Xuanzhe Liu (Peking University, China)

Learning Dual Retrieval Module for Semi-supervised Relation Extraction

Hongtao Lin (University of Southern California, USA); Jun Yan (Tsinghua University, China); Meng Qu (University of Illinois Urbana-Champaign, USA); Xiang Ren (University of Southern California, USA)

12:30-14:00 **Food Truck Lunch:** Embarcadero Plaza

14:00-15:30 **Poster Session:** Research Track and Demos (Pacific Concourse)

Chairs: Ashton Anderson (U of Toronto), Joe DeBlasio (Google), Reza Zafarani (Syracuse University)

Autonomous Learning for Face Recognition in the Wild via Ambient Wireless Cues

Chris Xiaoxuan Lu (University of Oxford, UK); Xuan Kan (Tongji University, China); Bowen Du (University of Warwick, UK); Changhao Chen (University of Oxford, UK); Hongkai Wen (University of Warwick, UK); Andrew Markham (University of Oxford, UK); Niki Trigoni (University of Oxford, UK); John Stankovic (University of Virginia, USA)

Rating Augmentation with Generative Adversarial Networks towards Accurate Collaborative Filtering

Dong-Kyu Chae (Hanyang University, South Korea); Jin-Soo Kang (Hanyang University, South Korea); Sang-Wook Kim (Hanyang University, South Korea); Jaeho Choi (Naver Corporation, South Korea)

Learning Graph Pooling and Hybrid Convolutional Operations for Text Representations

Hongyang Gao (Texas A&M University, USA); Yongjun Chen (Washington State University, USA); Shuiwang Ji (Texas A&M University, USA)

Classifying Extremely Short Texts by Exploiting Semantic Centroids in Word Mover's Distance Space

Changchun Li (Jilin University, China); Jihong Ouyang (Jilin University, China); Ximing Li (Jilin University, China)

Exploring Perceived Emotional Intelligence of Personality-Driven Virtual Agents in Handling User Challenges

Xiaojuan Ma (Hong Kong University of Science and Technology, Hong Kong); Emily Yang (Hong Kong University of Science and Technology, Hong Kong); Pascale Fung (Hong Kong University of Science and Technology, Hong Kong)

Improving Neural Response Diversity with Frequency-Aware Cross-Entropy Loss

Shaojie Jiang (University of Amsterdam, Netherlands); Pengjie Ren (University of Amsterdam, Netherlands); Christof Monz (University of Amsterdam, Netherlands); Maarten de Rijke (University of Amsterdam, Netherlands)

Adversarial Sampling and Training for Semi-Supervised Information Retrieval

Dae Hoon Park (Huawei Research America, USA); Yi Chang (Jilin University, China)

The Silent Majority Speaks: Inferring Silent Users' Opinions in Online Social Networks

Lei Wang (Beihang University, China); Jianwei Niu (Beihang University, China); Xuefeng Liu (Beihang University, China); Kaili Mao (Beihang University, China)

DPLink: User Identity Linkage via Deep Neural Network From Heterogeneous Mobility Data

Jie Feng (Tsinghua University, China); Mingyang Zhang (Tsinghua University, China); Huandong Wang (Tsinghua University, China); Zeyu Yang (Tsinghua University, China); Chao Zhang (University of Illinois Urbana-Champaign, USA); Yong Li (Tsinghua University, China); Depeng Jin (Tsinghua University, China)

Tortoise or Hare? Quantifying the Effects of Performance on Mobile App Retention

Agustin Zuniga (University of Helsinki, Finland); Huber Flores (University of Helsinki, Finland); Eemil Lagerspetz (University of Helsinki, Finland); Petteri Nurmi (Lancaster University, UK; University of Helsinki, Finland); Sasu Tarkoma (University of Helsinki, Finland); Pan Hui (University of Helsinki, Finland; Hong Kong University of Science and Technology, Hong Kong); Jukka Manner (Aalto University, Finland)

Learning Binary Hash Codes for Fast Anchor Link Retrieval across Networks

Yongqing Wang (Chinese Academy of Sciences, China); Huawei Shen (Chinese Academy of Sciences, China); Jinhua Gao (Chinese Academy of Sciences, China); Xueqi Cheng (Chinese Academy of Sciences, China)

RealGraph: A Graph Engine Leveraging the Power-Law Distribution of Real-World Graphs

Yong-Yeon Jo (Hanyang University, South Korea); Myung-Hwan Jang (Hanyang University, South Korea); Sang-Wook Kim (Hanyang University, South Korea); Sunju Park (Yonsei University, South Korea)

A Novel Unsupervised Approach for Precise Temporal Slot Filling from Incomplete and Noisy Temporal Contexts

Xueying Wang (University of Notre Dame, USA); Haiqiao Zhang (University of Notre Dame, USA); Qi Li (University of Notre Dame, USA); Yiyu Shi (University of Notre Dame, USA); Meng Jiang (University of Notre Dame, USA)

MCVAE: Margin-based Conditional Variational Autoencoder for Relation Classification and Pattern Generation

Fenglong Ma (State University of New York Buffalo, USA); Yaliang Li (Tencent Medical AI Lab, USA); Chenwei Zhang (University of Illinois Chicago, USA); Jing Gao (State University of New York Buffalo, USA); Nan Du (Tencent Medical AI Lab, USA); Wei Fan (Tencent Medical AI Lab, USA)

Neural Chinese Word Segmentation with Lexicon and Unlabeled Data via Posterior Regularization

Junxin Liu (Tsinghua University, China); Fangzhao Wu (Microsoft, China); Chuhan Wu (Tsinghua University, China); Yongfeng Huang (Tsinghua University, China); Xing Xie (Microsoft, China)

Who Watches the Watchmen: Exploring Complaints on the Web

Damilola Ibosiola (Queen Mary University of London, UK); Ignacio Castro (Queen Mary University of London, UK); Gianluca Stringhini (Boston University, USA); Steve Uhlig (Queen Mary University of London, UK); Gareth Tyson (Queen Mary University of London, UK)

A Family of Fuzzy Orthogonal Projection Models for Monolingual and Cross-lingual Hypernymy Prediction

Chengyu Wang (East China Normal University, China); Yan Fan (East China Normal University, China); Xiaofeng He (East China Normal University, China); Aoying Zhou (East China Normal University, China)

Dual Graph Attention Networks for Deep Latent Representation of Multifaceted Social Effects in Recommender System

Qitian Wu; Hengrui Zhang; Xiaofeng Gao (Shanghai Jiao Tong University, China); Peng He (Tencent, China); Paul Weng (Shanghai Jiao Tong University, China); Han Gao (Tencent, China); Guihai Chen (Shanghai Jiao Tong University, China)

RAQ: Relationship-Aware Graph Querying in Large Networks

Jithin Vachery (Indian Institute of Technology Madras, India); Akhil Arora (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Sayan Ranu (Indian Institute of Technology Dehli, India); Arnab Bhattacharya (Indian Institute of Technology Kanpur, India)

Exploring User Behavior in Email Re-Finding Tasks

Joel Mackenzie (RMIT University, Australia); Kshitiz Gupta (Microsoft, USA); Fang Qiao (Microsoft, USA); Ahmed Hassan Awadallah (Microsoft, USA); Milad Shokouhi (Microsoft, USA)

Understanding Urban Dynamics via State-sharing Hidden Markov Model

Tong Xia (Tsinghua University, China); Yue Yu (Tsinghua University, China); Fengli Xu (Tsinghua University, China); Yong Li (Tsinghua University, China); Funing Sun (Tencent Inc., China); Diansheng Guo (Tencent Inc., China)

Unnecessarily Identifiable: Quantifying the finger printability of browser extensions due to bloat

Oleksii Starov (State University of New York Stony Brook, USA); Pierre Laperdrix (State University of New York Stony Brook, USA); Alexandros Kapravelos (North Carolina State University, USA); Nick Nikiforakis (State University of New York Stony Brook, USA)

Truth inference at scale: A Bayesian model for adjudicating highly redundant crowd annotations

Yuan Li (University of Melbourne, Australia); Benjamin I. P. Rubinstein (University of Melbourne, Australia); Trevor Cohn (University of Melbourne, Australia)

Navigating the Maze of Wikidata Query Logs

Angela Bonifati (Lyon 1 University, France); Wim Martens (University of Bayreuth, Germany); Thomas Timm (University of Bayreuth, Germany)

Privacy-Preserving Crowd-Sourcing of Web Searches with Private Data Donor
Vincent Primault (University College London, UK); Vasileios Lampos (University College London, UK); Ingemar Cox (University College London, UK); Emiliano De Cristofaro (University College London, UK)

Improving Medical Code Prediction from Clinical Text via Incorporating Online Knowledge Sources
Tian Bai (Temple University, USA); Slobodan Vucetic (Temple University, USA)

Predicting ConceptNet Path Quality Using Crowdsourced Assessments of Naturalness
Yilun Zhou (Massachusetts Institute of Technology, USA); Steven Schockaert (Cardiff University, UK); Julie Shah (Massachusetts Institute of Technology, USA)

Maximizing Current Flow Closeness under Cardinality Constraints
Huan Li (Fudan University, China); Richard Peng (Georgia Institute of Technology, USA); Liren Shan (Fudan University, China); Yuhao Yi (Fudan University, China); Zhongzhi Zhang (Fudan University, China)

DLocRL: A Deep Learning Pipeline for Fine-Grained Location Recognition and Linking in Tweets
Canwen Xu (Wuhan University, China); Jing Li (Nanyang Technological University, Singapore); Xiangyang Luo (State Key Lab of Mathematical Engineering and Advanced Computing, China); Jiaxin Pei (Wuhan University, China); Chenliang Li (Wuhan University, China); Donghong Ji (Wuhan University, China)

Semi-supervised Multi-view Individual and Sharable Feature Learning for Webpage Classification
Fei Wu (Nanjing University of Posts and Telecommunications, China); Xiao-Yuan Jing (Wuhan University and Nanjing University of Posts and Telecommunications, China); Jun Zhou (Nanjing University of Posts and Telecommunications, China); Yimu Ji (Nanjing University of Posts and Telecommunications, China); Chao Lan (University of Wyoming, USA); Qinghua Huang; Ruchuan Wang (Nanjing University of Posts and Telecommunications, China)

Feature Generation by Convolutional Neural Network for Click-Through Rate Prediction
Bin Liu (Huawei Noah's Ark Lab, China); Ruiming Tang (Huawei Noah's Ark Lab, China); Yingzhi Chen (Jinan University, China); Jinkai Yu (Huawei Noah's Ark Lab, China); Hui Feng Guo (Huawei Noah's Ark Lab, China); Yuzhou Zhang (Huawei Noah's Ark Lab, China)

Listening between the Lines: Learning Personal Attributes from Conversations
Anna Tigunova (Max Planck Institute for Informatics, Germany); Andrew Yates (Max Planck Institute for Informatics, Germany); Paramita Mirza (Max Planck Institute for Informatics, Germany); Gerhard Weikum (Max Planck Institute for Informatics, Germany)

Cross-Network Embedding for Multi-Network Alignment
Xiaokai Chu (Chinese Academy of Sciences, China); Xinxin Fan (Chinese Academy of Sciences, China); Di Yao (Chinese Academy of Sciences, China); Zhihua Zhu (Chinese Academy of Sciences, China); Jianhui Huang (Chinese Academy of Sciences, China); Jingping Bi (Chinese Academy of Sciences, China)

Towards Self-Adaptive Metric Learning On the Fly
Yang Gao (University of Texas Dallas, USA); Yi-Fan Li (University of Texas Dallas, USA); Swarup Chandra (University of Texas Dallas, USA); Latifur Khan (University of Texas Dallas, USA); Bhavani Thuraisingham (University of Texas Dallas, USA)

No More than What I Post: Preventing Linkage Attacks on Check-in Services
Fengli Xu (Tsinghua University, China); Zhen Tu (Tsinghua University, China); Hongjia Huang (Tsinghua University, China); Shuhao Chang (Tsinghua University, China); Yong Li (Tsinghua University, China)

Graphy: A High Performance CPU-GPU Hybrid System for Node Embedding
Zhaocheng Zhu (Montréal Institute for Learning Algorithms, Canada); Shizhen Xu (Tsinghua University, China); Jian Tang (Montréal Institute for Learning Algorithms, Canada); Meng Qu (Montréal Institute for Learning Algorithms, Canada)

Revisiting Opinion Dynamics with Varying Susceptibility to Persuasion via Non-Convex Local Search
T-H. Hubert Chan (University of Hong Kong, Hong Kong); Zhibin Liang (University of Hong Kong, Hong Kong); Mauro Sozio (Télécom ParisTech, France)

Grid-based Evaluation Metrics for Web Image Search
Xiaohui Xie (Tsinghua University, China); Jiaxin Mao (Tsinghua University, China); Yiqun Liu (Tsinghua University, China); Maarten de Rijke (University of Amsterdam, Netherlands); Yunqiu Shao (Tsinghua University, China); Zixin Ye (Beihang University, China); Min Zhang (Tsinghua University, China); Shaoping Ma (Tsinghua University, China)

TiFi: Taxonomy Induction for Fictional Domains

Cuong Xuan Chu (Max Planck Institute for Informatics, Germany); Simon Razniewski (Max Planck Institute for Informatics, Germany); Gerhard Weikum (Max Planck Institute for Informatics, Germany)

Efficient (α, β) -Core Computation: an Index-based Approach

Boge Liu (University of New South Wales, Australia); Long Yuan (Nanjing University of Science and Technology, China); Xuemin Lin (University of New South Wales, Australia); Lu Qin (University of Technology Sydney, Australia); Wenjie Zhang (University of New South Wales, Australia); Jingren Zhou (Alibaba Group, China)

Large-Scale Talent Flow Forecast with Dynamic Latent Factor Model

Le Zhang (University of Science and Technology of China, China); Hengshu Zhu (Baidu Talent Intelligence Center, China); Tong Xu (University of Science and Technology of China, China); Chen Zhu (Baidu Talent Intelligence Center, China); Chuan Qin (University of Science and Technology of China, China); Hui Xiong (Baidu Talent Intelligence Center, China); Enhong Chen (University of Science and Technology of China, China)

A Dynamic Embedding Model of the Media Landscape

Jérémie Rappaz (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Dylan Bourgeois (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Karl Aberer (Ecole Polytechnique Fédérale de Lausanne, Switzerland)

Judging a Book by Its Cover: The Effect of Facial Perception on Centrality in Social Networks

Dongyu Zhang (Dalian University of Technology, China); Teng Guo (Dalian University of Technology, China); Hanxiao Pan (Dalian University of Technology, China); Jie Hou (Dalian University of Technology, China); Zhitao Feng (Dalian University of Technology, China); Liang Yang (Dalian University of Technology, China); Hongfei Lin (Dalian University of Technology, China); Feng Xia (Dalian University of Technology, China)

LAVA: Longitudinal Adversarial Attack on Electronic Health Records Data

Sungtae An (Georgia Institute of Technology, USA); Cao Xiao (IBM, USA); Walter F. Stewart (HINT Consultants, USA); Jimeng Sun (Georgia Institute of Technology, USA)

Generating Product Descriptions from User Reviews

Slava Novgorodov (eBay Research, Israel); Guy Elad (Technion - Israel Institute of Technology, Israel); Ido Guy (eBay Research, Israel); Kira Radinsky (Technion - Israel Institute of Technology, Israel)

Securing the Deep Fraud Detector in Large-Scale E-Commerce Platform via Adversarial Machine Learning Approach

Qingyu Guo (Nanyang Technological University, Singapore); Zhao Li (Alibaba Group, China); Bo An (Nanyang Technological University, Singapore); Pengrui Hui (Alibaba Group, China); Jiaming Huang (Alibaba Group, China); Long Zhang (Alibaba Group, China); Mengchen Zhao (Nanyang Technological University, Singapore)

Revisiting Wedge Sampling for Triangle Counting

Ata Turk (Boston University, USA); Duru Turkoglu (Loyola University, USA)

A Large-scale Study on the Risks of the HTML5 WebAPI for Mobile Sensor-based Attacks

Francesco Marcantoni (University of Illinois Chicago, USA); Michalis Diamantaris (FORTH, Greece); Sotiris Ioannidis (FORTH, Greece); Jason Polakis (University of Illinois Chicago, USA)

How Intention Informed Recommendations Modulate Choices: A Field Study of Spoken Word Content

Longqi Yang (Cornell University, USA); Michael Sobolev (Cornell University, USA); Yu Wang (Himalaya Media, USA); Jenny Chen (City University of New York, USA); Drew Dunne (Cornell University, USA); Christina Tsangouri (Cornell University, USA); Nicola Dell (Cornell University, USA); Mor Naaman (Cornell University, USA); Deborah Estrin (Cornell University, USA)

Anomaly detection in the dynamics of web and social networks using associative memory

Volodymyr Miz (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Benjamin Ricaud (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Kirell Benzi (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Pierre Vanderghenst (Ecole Polytechnique Fédérale de Lausanne, Switzerland)

A Human-in-the-loop Attribute Design Framework for Classification
Md Abdus Salam (University of Texas Arlington, USA); Mary E. Koone (University of Texas Arlington, USA); Saravanan Thirumuruganathan (Qatar Computing Research Institute, Qatar); Gautam Das (University of Texas Arlington, USA); Senjuti Basu Roy (New Jersey Institute of Technology, USA)

MVAE: Multimodal Variational Autoencoder for Fake News Detection
Dhruv Khattar (International Institute of Information Technology Hyderabad, India); Jaipal Singh Goud (International Institute of Information Technology Hyderabad, India); Manish Gupta (International Institute of Information Technology Hyderabad, India); Vasudeva Varma (International Institute of Information Technology Hyderabad, India)

How Representative is a SPARQL Benchmark? An Analysis of RDF Triplestore Benchmarks
Muhammad Saleem (University of Leipzig, Germany); Gábor Szárnyas (Budapest University of Technology and Economics, Hungary); Felix Conrads (Universität Leipzig, Germany); Syed Ahmad Chan Bukhari (Yale University, USA); Qaiser Mehmood (National University of Ireland Galway, Ireland); Axel-Cyrille Ngonga Ngomo (Paderborn University, Germany)

Fairness in Algorithmic Decision Making: An Excursion Through the Lens of Causality
Aria Khademi (Pennsylvania State University, USA); Sanghack Lee (Purdue University, USA); David Foley (Pennsylvania State University, USA); Vasant Honavar (Pennsylvania State University, USA)

Learning clusters through information diffusion
Liudmila Prokhorenkova (Moscow Institute of Physics and Technology and Yandex, Russia); Alexey Tikhonov (Yandex, Germany); Nelly Litvak (University of Twente, Netherlands)

Neural Variational Correlated Topic Modeling
Luyang Liu (Beijing Institute of Technology, China); Heyan Huang (Beijing Institute of Technology, China); Yang Gao (Beijing Insititute of Technology, China); Yongfeng Zhang (Rutgers University, USA); Xiaochi Wei (Baidu, China)

From Small-scale to Large-scale Text Classification
Kang-Min Kim (Korea University, South Korea); Yeachan Kim (Korea University, South Korea); Jungho Lee (Korea University, South Korea); Ji-Min Lee (Korea University, South Korea); Sangkeun Lee (Korea University, South Korea)

Personalized Bundle List Recommendation
Jinze Bai (Peking University, China); Chang Zhou (Alibaba Group, China); Junshuai Song (Peking University, China); Xiaoru Qu (Peking University, China); Weiting An (Alibaba Group, China); Zhao Li (Alibaba Group, China); Jun Gao (Peking University, China)

Learning Dual Retrieval Module for Semi-supervised Relation Extraction
Hongtao Lin (University of Southern California, USA); Jun Yan (Tsinghua University, China); Meng Qu (University of Illinois Urbana-Champaign, USA); Xiang Ren (University of Southern California, USA)

PrivdEx: Privacy Preserving and Secure Exchange of Digital Identity Assets
Hasini Gunasinghe (Purdue University, USA); Ashish Kundu (IBM, USA); Elisa Bertino (Purdue University, USA); Hugo Krawczyk (IBM, USA); Suresh Chari (IBM, USA); Kapil Singh (IBM, USA); Dong Su (IBM, USA)

Efficient Neural Ranking with LSH-based Word Embeddings
Shiyu Ji (University of California Santa Barbara, USA); Jinjin Shao (University of California Santa Barbara, USA); Tao Yang (University of California Santa Barbara, USA)

Globally-Optimized Realtime Supply-Demand Matching in On-Demand Ridesharing
Yifang Liu (Smule, USA); Will Skinner (Engine ML, USA); Chongyuan Xiang (Opendoor Labs, USA)

Recommender Systems with Heterogeneous Side Information
Tianqiao Liu (TAL AI Lab, China); Zhiwei Wang (Michigan State University, USA); Jiliang Tang (Michigan State University, USA); Songfan Yang (TAL AI Lab, China); Zitao Liu (TAL AI Lab, China)

Review Response Generation in E-Commerce Platforms with External Product Information
Lujun Zhao (Fudan University, China); Kaisong Song (Alibaba Group, China); Changlong Sun (Alibaba Group, China); Qi Zhang (Fudan University, China); Xuanjing Huang (Fudan University, China); Xiaozhong Liu (Alibaba Group, China)

Signals Matter: Understanding Popularity and Impact of Users on Stack Overflow
Arpit Merchant; Daksh Shah; Gurpreet Singh Bhatia (Indraprastha Institute of Information Technology, India); Anurag Ghosh (International Institute of Information Technology Hyderabad, India); Ponnurangam Kumaraguru (Indraprastha Institute of Information Technology, India)

Learning How to Correct a Knowledge Base from the Edit History

Thomas Pellissier Tanon (Télécom ParisTech, France); Camille Bourgaux (PSL University, France); Fabian Suchanek (Télécom ParisTech, France)

Dual Neural Personalized Ranking

Seunghyeon Kim (Sungkyunkwan University, South Korea); Jongwuk Lee (Sungkyunkwan University, South Korea); Hyunjung Shim (Yonsei University, South Korea)

Triple Trustworthiness Measurement for Knowledge Graph

Shengbin Jia (Tongji University, China); Yang Xiang (Tongji University, China); Xiaojun Chen (Tongji University, China); Kun Wang (East China Normal University, China); Shijia E (Tongji University, China)

Enriching News Articles with Related Search Queries

David Carmel (Amazon Research, Israel); Yaroslav Fyodorov (Yahoo Research, Israel); Saar Kuzi (University of Illinois Urbana-Champaign, USA); Avihai Mejer (Yahoo Research, Israel); Fiana Raiber (Yahoo Research, Israel); Elad Rainshmidt (Oath, Israel)

Deriving User- and Content-specific Rewards for Contextual Bandits

Paolo Dragone (University of Trento, Italy); Rishabh Mehrotra (Spotify, UK); Mounia Lalmas (Spotify, UK)

Modeling Item-Specific Temporal Dynamics of Repeat Consumption for Recommender Systems

Chenyang Wang (Tsinghua University, China); Min Zhang (Tsinghua University, China); Weizhi Ma (Tsinghua University, China); Yiqun Liu (Tsinghua University, China); Shaoping Ma (Tsinghua University, China)

SpeedReader: Reader Mode Made Fast and Private

Mohammad Ghasemisharif (University of Illinois Chicago, USA); Peter Snyder (Brave Software, USA); Andrius Aucinas (Brave Software, UK); Benjamin Livshits (Brave Software and Imperial College London, UK)

Emoji-Powered Representation Learning for Cross-Lingual Sentiment Classification

Zhenpeng Chen (Peking University, China); Sheng Shen (University of California Berkeley, USA); Ziniu Hu (University of California Los Angeles, USA); Xuan Lu (Peking University, China); Qiaozhu Mei (University of Michigan, USA); Xuanzhe Liu (Peking University, China)

Hierarchical Neural Variational Model for Personalized Sequential Recommendation

Teng Xiao (Sun Yat-sen University, China); Shangsong Liang (Sun Yat-sen University, China); Zaiqiao Meng (Sun Yat-sen University, China)

Jointly Learning Explainable Rules for Recommendation with Knowledge Graph

Weizhi Ma (Tsinghua University, China); Min Zhang (Tsinghua University, China); Yue Cao (University of Southern California, USA); Woojeong Jin (University of Southern California, USA); Chenyang Wang (Tsinghua University, China); Yiqun Liu (Tsinghua University, China); Shaoping Ma (Tsinghua University, China); Xiang Ren (University of Southern California, USA)

Context-aware Variational Trajectory Encoding and Human Mobility Inference

Fan Zhou (University of Science and Technology of China, China); Xiaoli Yue (University of Science and Technology of China, China); Goce Trajcevski (Iowa State University, USA); Ting Zhong (University of Science and Technology of China, China); Kunpeng Zhang (University of Maryland, USA)

Adversarial Point-of-Interest Recommendation

Fan Zhou (University of Science and Technology of China, China); Ruiyang Yin (University of Science and Technology of China, China); Kunpeng Zhang (University of Maryland, USA); Goce Trajcevski (Iowa State University, USA); Ting Zhong (University of Science and Technology of China, China); Jin Wu (University of Science and Technology of China, China)

Predicting Human Mobility via Variational Attention

Qiang Gao (University of Science and Technology of China, China); Fan Zhou (University of Science and Technology of China, China); Goce Trajcevski (Iowa State University, USA); Kunpeng Zhang (University of Maryland, USA); Ting Zhong (University of Science and Technology of China, China); Fengli Zhang (University of Science and Technology of China, China)

Policy Gradients for Contextual Recommendations

Feiyang Pan (Chinese Academy of Sciences, China); Qingpeng Cai (Tsinghua University, China); Pingzhong Tang (Tsinghua University, China); Fuzhen Zhuang (Chinese Academy of Sciences, China); Qing He (Chinese Academy of Sciences, China)

- Abstractive Meeting Summarization via Hierarchical Adaptive Segmental Network Learning
Zhou Zhao (Zhejiang University, China); Haojie Pan (Zhejiang University, China); Changjie Fan (NetEase Fuxi AI Lab, China); Deng Cai (Zhejiang University, China); Min Yang (Shenzhen Institutes of Advanced Technology, China)
- CoaCor: Code Annotation for Code Retrieval with Reinforcement Learning
Ziyu Yao (Ohio State University, USA); Jayavardhan Reddy Peddamail (Ohio State University, USA); Huan Sun (Ohio State University, USA)
- Firsthand opiates abuse on social media: monitoring geospatial patterns of interest through a digital cohort
Duilio Balsamo (ISI Foundation, Italy); Paolo Bajardi (ISI Foundation, Italy); André Panisson (ISI Foundation, Italy)
- Revisiting User Mobility and Social Relationships in LBSNs: A Hypergraph Embedding Approach
Dingqi Yang (University of Fribourg, Switzerland); Bingqing Qu (University of Fribourg, Switzerland); Jie Yang (University of Fribourg, Switzerland); Philippe Cudre-Mauroux (University of Fribourg, Switzerland)
- Trajectories of Blocked Community Members: Redemption, Recidivism and Departure
Jonathan Chang (Cornell University, USA); Cristian Danescu-Niculescu-Mizil (Cornell University, USA)
- Moving Deep Learning into Web Browser: How Far Can We Go?
Yun Ma; Dongwei Xiang; Shuyu Zheng; Deyu Tian (Ministry of Education, China); Xuanzhe Liu (Peking University, China)
- The Music Streaming Sessions Dataset
Brian Brost (Spotify Research, UK); Rishabh Mehrotra (Spotify Research, UK); Tristan Jehan (Spotify Research, USA)
- Bi-LSTM-CRF Sequence Labeling for Keyphrase Extraction from Scholarly Documents
Rabah Alzaidy (Pennsylvania State University, USA); Cornelia Caragea (University of Illinois Chicago, USA); C. Lee Giles (Pennsylvania State University, USA)
- An Investigation of Cyber Autonomy on Government Websites
Hsu-Chun Hsiao (National Taiwan University, Taiwan); Tiffany Hyun-Jin Kim (HRL Laboratories, USA); Yu-Ming Ku (National Taiwan University, Taiwan); Chun-Ming Chang (National Taiwan University, Taiwan); Hung-Fang Chen (National Taiwan University, Taiwan); Yu-Jen Chen (National Taiwan University, Taiwan); Chun-Wen Wang (Cornell University, USA); Wei Jeng (National Taiwan University, Taiwan)
- Learning Intent to Book Metrics for Airbnb Search
Bradley Turnbull (Airbnb, USA)
- SaGe: Web Preemption for Public SPARQL Query Services
Thomas Minier (University of Nantes, France); Hala Skaf-Molli (University of Nantes, France); Pascal Molli (University of Nantes, France)
- On the Impact of Choice Architectures on Inequality in Online Donation Platforms
Abhijnan Chakraborty (Max Planck Institute for Software Systems, Germany); Nuno Mota (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Asia J. Biega (Max Planck Institute for Informatics, Germany); Krishna P. Gummadi (Max Planck Institute for Software Systems, Germany); Hoda Heidari (ETH Zurich, Switzerland)
- OUTGUARD: Detecting In-Browser Covert Cryptocurrency Mining in the Wild
Amin Kharraz (University of Illinois Urbana-Champaign, USA); Zane Ma (University of Illinois Urbana-Champaign, USA); Paul Murley (University of Illinois Urbana-Champaign, USA); Charles Lever (Georgia Institute of Technology, USA); Joshua Mason (University of Illinois Urbana-Champaign, USA); Andrew Miller (University of Illinois Urbana-Champaign, USA); Nikita Borisov (University of Illinois Urbana-Champaign, USA); Manos Antonakakis (Georgia Institute of Technology, USA); Michael Bailey (University of Illinois Urbana-Champaign, USA)
- Entity Personalized Talent Search Models with Tree Interaction Features
Cagri Ozcaglar (LinkedIn, USA); Sahin Geyik (LinkedIn, USA); Brian Schmitz (LinkedIn, USA); Prakhar Sharma (LinkedIn, USA); Alex Shelkovnykov (LinkedIn, USA); Yiming Ma (LinkedIn, USA); Erik Buchanan (LinkedIn, USA)
- Event-Driven Analysis of Crowd Dynamics in the Black Lives Matter Online Social Movement
Hao Peng (University of Michigan, USA); Ceren Budak (University of Michigan, USA); Daniel Romero (University of Michigan, USA)

Online Learning for Measuring Incentive Compatibility in Ad Auctions
Zhe Feng (Harvard University, USA); Okke Schrijvers (Facebook Research, USA); Eric Sodomka (Facebook Research, USA)

Modeling the Factors of User Success in Online Debate
Esin Durmus (Cornell University, USA); Claire Cardie (Cornell University, USA)

Efficient On-Device Public-Private Computation
Alessandro Epasto (Google, USA); Hossein Esfandiari (Google, USA); Vahab Mirrokni (Google, USA)

Improving Top-k Recommendation via Joint Collaborative Autoencoders
Ziwei Zhu (Texas A&M University, USA); Jianling Wang (Texas A&M University, USA); James Caverlee (Texas A&M University, USA)

Adversarial Adaptation of Scene Graph Models for Understanding Civic Issues
Shanu Kumar (Indian Institute of Technology Kanpur, India); Shubham Atreja (IBM, India); Anjali Singh (IBM, India); Mohit Jain (IBM, India)

Demographic Inference and Representative Population Estimates from Multilingual Social Media Data
Zijian Wang (Stanford University, USA); Scott Hale (University of Oxford, UK); David Ifeoluwa Adelani (Saarland, Germany); Przemyslaw Grabowicz (Max Planck Institute for Software Systems, Germany); Timo Hartman; Fabian Flöck (GESIS, Germany); David Jurgens (University of Michigan, USA)

Google Dataset Search: Building a Search Engine for Datasets in an Open Web Ecosystem
Natasha Noy (Google, USA); Dan Brickley (Google, USA); Matthew Burgess (Google, USA)

To Return or to Explore: Modelling Human Mobility and Dynamics in Cyberspace
Tianran Hu (University of Rochester, USA); Yinglong Xia (Futurewei Technologies, USA); Jiebo Luo (University of Rochester, USA)

Spiders like Onions: on the Network of Tor Hidden Services
Massimo Bernaschi (Istituto per le Applicazioni del Calcolo Mauro Picone, Italy); Alessandro Celestini (Istituto per le Applicazioni del Calcolo Mauro Picone, Italy); Stefano Guarino (Istituto per le Applicazioni del Calcolo Mauro Picone, Italy); Flavio Lombardi (Istituto per le Applicazioni del Calcolo Mauro Picone, Italy); Enrico Mastrostefano (Istituto per le Applicazioni del Calcolo Mauro Picone, Italy)

Selling a Single Item with Negative Externalities
Matheus Xavier Ferreira (Princeton University, USA); S. Matthew Weinberg (Princeton University, USA); Danny Yuxing Huang (Princeton University, USA); Nick Feamster (Princeton University, USA); Tithi Chattopadhyay (Princeton University, USA)

Predictive Crawling for Commercial Web Content
Shuguang Han (Google, USA); Bernhard Brodowsky (Google, Switzerland); Przemek Gajda (Google, Switzerland); Sergey Novikov (Google, Switzerland); Mike Bendersky (Google, USA); Marc Najork (Google, USA); Robin Dua (Google, USA); Alexandrin Popescul (Google, USA)

Addressing Trust Bias for Unbiased Learning-to-Rank
Aman Agarwal (Cornell University, USA); Xuanhui Wang (Google, USA); Cheng Li (Google, USA); Michael Bendersky (Google, USA); Marc Najork (Google, USA)

Understanding the Effects of the Neighbourhood Built Environment on Public Health with Open Data Apinan
Hasthanasombat (University of Cambridge, UK); Cecilia Mascolo (University of Cambridge, UK)

Evaluating Anti-Fingerprinting Privacy Enhancing Technologies
Amit Datta (Snap, USA); Jianan Lu (University of California Berkeley, USA); Michael Carl Tschantz (International Computer Science Institute, USA)

Learning Task-Specific City Region Partitions
Hongjian Wang (Pennsylvania State University, USA); Porter Jenkins (Pennsylvania State University, USA); Hua Wei (Pennsylvania State University, USA); Fei Wu (Pennsylvania State University, USA); Zhenhui Li (Pennsylvania State University, USA)

A Semi-Supervised Active-learning Truth Estimator for Social Networks
Hang Cui (University of Illinois Urbana Champaign, USA); Tarek Abdelzaher (University of Illinois Urbana-Champaign, USA); Lance Kaplan (Army Research Laboratories, USA)

Dynamic Ensemble of Contextual Bandits to Satisfy Users' Changing Interests
Qingyun Wu (University of Virginia, USA); Huazheng Wang (University of Virginia, USA); Yanen Li (Snap, USA); Hongning Wang (University of Virginia, USA)

Exploiting Diversity in Android TLS Implementations for Mobile App Traffic Classification

Satadal Sengupta (Indian Institute of Technology Kharagpur, India); Niloy Ganguly (Indian Institute of Technology Kharagpur, India); Pradipta De (Georgia Southern University, USA); Sandip Chakraborty (Indian Institute of Technology Kharagpur, India)

Blockchain Mining Games with Pay-Forward

Philip Lazos (University of Oxford, UK); Elias Koutsopoulos (University of Oxford, UK); Foluso Ogunlana (University of Oxford, UK); Paolo Serafino (University of Oxford, UK)

“Data Strikes”: Evaluating the Effectiveness of New Forms of Collective Action Against Technology Platforms

Nicholas Vincent (Northwestern University, USA); Brent Hecht (Northwestern University, USA); Shilad Sen (Macalester College, USA)

With a little help from my friends (and their friends): Influence neighborhoods for social recommendations

Avni Gulati (San Jose State University, USA); Magdalini Eirinaki (San Jose State University, USA)

Inferring Search Queries from Web Documents via a Graph-Augmented Sequence to Attention Network

Fred. X Han (University of Alberta, Canada); Di Niu (University of Alberta, Canada); Kunfeng Lai (Tencent, China); Weidong Guo (Tencent, China); Yancheng He (Tencent, China); Yu Xu (Tencent, China)

Quality Effects on User Preferences and Behaviors in Mobile News Streaming

Hongyu Lu (Tsinghua University, China); Min Zhang (Tsinghua University, China); Weizhi Ma (Tsinghua University, China); Yunqiu Shao (Tsinghua University, China); Yiqun Liu (Tsinghua University, China); Shaoping Ma (Tsinghua University, China)

Anything to Hide? Studying Minified and Obfuscated Code in the Web

Philippe Skolka (TU Darmstadt, Germany); Cristian-Alexandru Staicu (TU Darmstadt, Germany); Michael Pradel (TU Darmstadt, Germany)

InfraNodus — Generating Insight Using Text Network Analysis

Dmitry Paranyushkin

Voyageur: An Experiential Travel Search Engine

Sara Evensen, Aaron Feng, Alon Halevy, Jinfeng Li, Vivian Li, Yuliang Li, Huining Liu, George Mihaila, John Morales, Natalie Nuno, Ekaterina Pavlovic, Wang-Chiew Tan, and Xiaolan Wang

SGX-PySpark: Secure Distributed Data Analytics

Do Le Quoc, Franz Gregor, Jatinder Singh, and Christof Fetzer

Exam Keeper: Detecting Questions with Easy-to-Find Answers

Ting-Lun Hsu, Shih-Chieh Dai, and Lun-Wei Ku

ExQuisiTe: Explaining Quantities in Text

Yusra Ibrahim and Gerhard Weikum

Automated Fact-Checking in the News Room

Sebastiao Miranda, David Nogueira, Afonso Mendes, Andreas Vlachos, Andrew Secker, Rebecca Garrett, Jeff Mitchel, and Zita Marinho

Bridging Screen Readers and Voice Assistants for Enhanced Eyes-Free Web Search

Alexandra Vtyurina, Adam Fourney, Meredith Ringel Morris, Leah Findlater, and Ryen W. White

SmartDBO: Smart Docker Benchmarking Orchestrator for Web-application

Devki Nandan Jha, Michael Nee, Zhenyu Wen, Albert Zomaya, and Rajiv Ranjan

A hybrid Model for Target-dependent Tweet Sentiment Prediction

Quanzhi Li, Qiong Zhang, and Luo Si

16:00-18:00 **Research track:** Systems and Infrastructure (Grand Ballroom A)

Chair: Arun Iyengar (IBM Research, US)

Using Variability as a Guiding Principle to Reduce Latency in Web Applications via OS Profiling

Amoghavarsha Suresh (State University of New York Stony Brook, USA); Anshul Gandhi (State University of New York Stony Brook, USA)

Snapshot-based Loading Acceleration of Web Apps with Nondeterministic JavaScript Execution

Jihwan Yeo (Seoul National University, South Korea); Changhyun Shin (Seoul National University, South Korea); Soo-Mook Moon (Seoul National University, South Korea)

Nameles: An intelligent system for Real-Time Filtering of Invalid Ad Traffic

Antonio Pastor (Universidad Carlos III de Madrid, Spain); Matti Pärssinen (Aalto University, Finland); Patricia Callejo (Universidad Carlos III de Madrid, Spain); Pelayo Vallina (Universidad Carlos III de Madrid, Spain); Rubén Cuevas (Universidad Carlos III de Madrid, Spain); Ángel Cuevas (Universidad Carlos III de Madrid, Spain); Mikko Kotila (Botlab, USA); Arturo Azcorra (Universidad Carlos III de Madrid, Spain)

ShadowBlock: A Lightweight and Stealthy Adblocking Browser

Shitong Zhu (University of California Riverside, USA); Umar Iqbal (University of Iowa, USA); Zhongjie Wang (University of California Riverside, USA); Zhiyun Qian (University of California Riverside, USA); Zubair Shafiq (University of Iowa, USA); Weiteng Chen (University of California Riverside, USA)

Web Experience in Operational Mobile Networks: Lessons from Two Million Page Visits

Mohammad Rajiullah (Karlstad University, Sweden); Andra Lutu (Telefonica Research, Spain); Ali Safari Khatouni (Politecnico di Torino, Italy); Mah-Rukh Fida (University of Edinburgh, UK); Marco Mellia (Politecnico di Torino, Italy); Anna Brunstrom (Karlstad University, Sweden); Ozgu Alay (Simula Research Laboratory, Norway); Stefan Alfredsson (Karlstad University, Sweden); Vincenzo Mancuso (IMDEA Networks Institute, Spain)

16:00-18:00 **Research track:** Network Analysis (Bayview A+B)

Chair: Qiaozhu Mei (University of Michigan, US)

CommunityGAN: Community Detection with Generative Adversarial Nets

Yuting Jia (Shanghai Jiao Tong University, China); Qinqin Zhang (Shanghai Jiao Tong University, China); Weinan Zhang (Shanghai Jiao Tong University, China); Xinbing Wang (Shanghai Jiao Tong University, China)

Community Detection Through Likelihood Optimization: In Search of a Sound Model

Liudmila Prokhorenkova (Moscow Institute of Physics and Technology and Yandex, Russia); Alexey Tikhonov (Yandex, Russia)

Heterogeneous Graph Attention Network

Xiao Wang (Beijing University of Posts and Telecommunications, China); Houye Ji (Beijing University of Posts and Telecommunications, China); Chuan Shi (Beijing University of Posts and Telecommunications, China); Bai Wang (Beijing University of Posts and Telecommunications, China); Yanfang Ye (West Virginia University, USA); Peng Cui (Tsinghua University, China); Philip S Yu (University of Illinois Chicago, USA)

Modeling Dynamic Networks of Timestamped Relational Events using Point Process Block Models

Ruthwik Junuthula (University of Toledo, USA); Maysam Haghdan (University of Toledo, USA); Kevin S. Xu (University of Toledo, USA); Vijay Devabhaktuni (University of Toledo, USA)

Link Prediction in Networks with Core-Fringe Data

Austin Benson (Cornell University, USA); Jon Kleinberg (Cornell University, USA)

16:00-18:00 **Research track:** Mobile and Ubiquitous Computing (Grand Ballroom C)

Chair: Hari Sundaram (University of Illinois Urbana-Champaign, US)

CBHE: Corner-based Building Height Estimation for Complex Street Scene Images

Yunxiang Zhao (University of Melbourne, Australia); Jianzhong Qi (University of Melbourne, Australia); Rui Zhang (University of Melbourne, Australia)

STFNets: Learning Sensing Signals from the Time-Frequency Perspective with Short-Time Fourier Neural Networks

Shuochao Yao (University of Illinois Urbana-Champaign, USA); Ailing Piao (University of Washington, USA); Wenjun Jiang (State University of New York Buffalo, USA); Yiran Zhao; Huajie Shao; Shengzhong Liu; Dongxin Liu; Jinyang Li; Tianshi Wang (University of Illinois Urbana-Champaign, USA); Shaohan Hu (IBM, USA); Lu Su (State University of New York Buffalo, USA); Jiawei Han; Tarek Abdelzaher (University of Illinois Urbana-Champaign, USA)

A First Look at Deep Learning Apps on Smartphones

Mengwei Xu (Peking University, China); Jiawei Liu (Peking University, China); Yuanqiang Liu (Peking University, China); Felix Xiaozhu Lin (Purdue University, USA); Yunxin Liu (Microsoft, China); Xuanzhe Liu (Peking University, China)

Learning from Multiple Cities: A Meta-Learning Approach for Spatial-Temporal Prediction

Huaxiu Yao (Pennsylvania State University, USA); Yiding Liu (Nanyang Technological University, Singapore); Ying Wei (Tencent, China); Xianfeng Tang (Pennsylvania State University, USA); Zhenhui Li (Pennsylvania State University, USA)

Cookie Synchronization: Everything You Always Wanted to Know But Were Afraid to Ask

Panagiotis Papadopoulos (Brave Software, Greece); Nicolas Kourtellis (Telefonica Research, Spain); Evangelos Markatos (FORTH, Greece)

16:00-17:36 **Research track:** Health on the Web (Seacliff A+B+C)

Chair: Emre Kiciman (Microsoft Research, US)

Goal-setting and Achievement in Activity Tracking Apps: A Case Study of MyFitnessPal

Mitchell Gordon (Stanford University, USA); Tim Althoff (Stanford University, USA); Jure Leskovec (Stanford University, USA)

Transfer Learning for Unsupervised Influenza-like Illness Models from Online Search Data

Bin Zou (University College London, UK); Vasileios Lampos (University College London, UK); Ingemar Cox (University College London, UK)

Modeling Heart Rate and Activity Data for Personalized Fitness Recommendation

Jianmo Ni (University of California San Diego, USA); Larry Muhlstein (University of California San Diego, USA); Julian McAuley (University of California San Diego, USA)

HAR: A Hierarchical Attention Retrieval Model for Healthcare Question Answering

Ming Zhu (Virginia Tech, USA); Aman Ahuja (Virginia Tech, USA); Wei Wei (Google, USA); Chandan K. Reddy (Virginia Tech, USA)

16:00-17:36 **Research track:** Sarcasm, Sentiment, and Language (Grand Ballroom B)

Chair: Liane Lewin-Eytan (Amazon, Israel)

Sarcasm Detection with Self-matching Networks and Low-rank Bilinear Pooling

Tao Xiong (Ant Financial, China); Peiran Zhang (Alibaba Group, China); Hongbo Zhu (Alibaba Group, China); Yihui Yang (AfterPay, China)

Aspect-level Sentiment Analysis Using AS-Capsules

Yequan Wang (Tsinghua University, China); Aixin Sun (Nanyang Technological University, Singapore); Minlie Huang (Tsinghua University, China); Xiaoyan Zhu (Tsinghua University, China)

Language in Our Time: An Empirical Analysis of Hashtags

Yang Zhang (CISPA, Germany)

SciLens: Evaluating the Quality of Scientific News Articles Using Social Media and Scientific Literature Indicators

Panayiotis Smeros (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Carlos Castillo (Universitat Pompeu Fabra, Spain); Karl Aberer (Ecole Polytechnique Fédérale de Lausanne, Switzerland)

18:00-19:00 **The Web Conference Townhall (Garden A+B)**

Chair: Wendy Hall (IW3C2)

Join IW3C2 members and the organizers of the past, present, and future Web Conference to discuss the state of the conference series and brainstorm about areas to improve.

Conference Schedule

The Future of the Open Web - Special Track – Thursday, May 16

Bayview A+B

10:30-10:45	Bob West (EPFL), Stephen LaPorte (Wikimedia Foundation)	Opening remarks
10:45-11:15	David Kaye (Clinical Professor of Law, UC Irvine School of Law; Director of International Justice Clinic; UN Special Rapporteur on the Promotion and Protection of the Rights to Freedom of Opinion and Expression)	Policing online speech
11:15-11:45	Brewster Kahle (Internet Archive)	Locking the Web Open—a Call for a New, Decentralized Web
11:45-11:50	Laura Perrenoud (ECAL University of Art and Design Lausanne), Alfatih Al Zouabi (ECAL University of Art and Design Lausanne), Eryk Salvaggio (swissnex)	Showcase: Infomesh Web Platform
11:50-12:20	Tim Smith (CERN)	Open Science and the Open Web
14:00-14:30	Nadia Eghbal (Protocol Labs)	The hidden costs of software
14:30-15:00	Adam Knight (Oxford, TongDigita)	China’s Threat to the Open Web
15:00-15:05	Laura Perrenoud (ECAL University of Art and Design Lausanne), Alfatih Al Zouabi (ECAL University of Art and Design Lausanne), Eryk Salvaggio (swissnex)	Showcase: Infomesh Web Platform
15:05-15:30	Marietje Schaake (Member of European Parliament)	Europe and the Open Internet
16:00-17:00	<p>Panelists: Lindsay Freeman (Human Rights Center, UC Berkeley), Renée DiResta (Mozilla Fellow), Jennie Bernstein (Urban Innovation Lead, UNICEF), Abby Vollmer (Senior Policy Manager, GitHub) Moderator: Jan Gerlach (Wikimedia Foundation)</p>	<p>Panel: The Future of Open Web: Challenges and Opportunities</p>

Conference Schedule

Friday, May 17

9:00-10:00 **Keynote:** Enlisting the Public to Build a Healthier Web Information Commons

Claire Wardle, TED Fellow (Ballroom A+B+C)

Chair: Leila Zia (Wikimedia Foundation, USA)

10:30-12:30 **Research track:** Graph Models (Bayview A+B)

Chair: Bruno Abrahao (New York University, US)

Generative Graph Models based on Laplacian Spectra

Alana Shine (University of Southern California, USA); David Kempe (University of Southern California, USA)

Learning Edge Properties in Graphs from Path Aggregations

Rakshit Agrawal (University of California Santa Cruz, USA); Luca de Alfaro (University of California Santa Cruz, USA)

Pruning based Distance Sketches with Provable Guarantees on Random Graphs

Hongyang Zhang (Stanford University, USA); Huacheng Yu (Harvard University, USA); Ashish Goel (Stanford University, USA)

Constrained Local Graph Clustering by Colored Random Walk

Yaowei Yan (Pennsylvania State University, USA); Yuchen Bian (Pennsylvania State University, USA); Dongsheng Luo (Pennsylvania State University, USA); Dongwon Lee (Pennsylvania State University, USA); Xiang Zhang (Pennsylvania State University, USA)

Decoupled Smoothing on Graphs

Alex Chin (Stanford University, USA); Yatong Chen (Stanford University, USA); Kristen M. Altenburger (Stanford University, USA); Johan Ugander (Stanford University, USA)

10:30-12:30 **Research track:** Economics, Monetization, and Online Markets (Seacliff A+B+C)

Chair: Mohammad Mahdian (Google, US)

Beyond Shortest Paths: Route Recommendations for Ride-sharing

Chak Fai Yuen (Indian Institute of Technology Delhi, India); Abhishek Pratap Singh (Indian Institute of Technology Delhi, India); Sagar Goyal (Indian Institute of Technology Delhi, India); Sayan Ranu (Indian Institute of Technology Delhi, India); Amitabha Bagchi (Indian Institute of Technology Delhi, India)

Reputation Deflation Through Dynamic Expertise Assessment in Online Labor Markets

Marios Kokkodis (Boston College, USA)

The Matthew Effect in Computation Contests: High Difficulty May Lead to 51% Dominance

Yulong Zeng (Nebulas, China); Song Zuo (Google, China)

Bayesian Exploration with Heterogeneous Agents

Nicole Immorlica (Microsoft, USA); Jieming Mao (University of Pennsylvania, USA); Aleksandrs Slivkins (Microsoft, USA); Zhiwei Steven Wu (University of Minnesota, USA)

Shapley Meets Uniform: An Axiomatic Framework for Attribution in Online Advertising

Raghav Singal (Columbia University, USA); Omar Besbes (Columbia University, USA); Antoine Desir (INSEAD, France); Vineet Goyal (Columbia University, USA); Garud Iyengar (Columbia University, USA)

10:30-12:30 **Research track:** Social Recommendation and Experimentation (Grand Ballroom A)

Chair: Vladan Radosavljevic (Spotify, US)

Improving Treatment Effect Estimators Through Experiment Splitting

Dominic Coey (Facebook, USA); Tom Cunningham (Facebook, USA)

How Serendipity Improves User Satisfaction with Recommendations? A Large-Scale User Evaluation
Li Chen (Hong Kong Baptist University, Hong Kong); Yonghua Yang (Alibaba Group, China); Ningxia Wang (Hong Kong Baptist University, Hong Kong); Keping Yang (Alibaba Group, China); Quan Yuan (inspirAI, China)

Graph Neural Networks for Social Recommendation

Wenqi Fan (City University of Hong Kong, Hong Kong); Yao Ma (Michigan State University, USA); Qing Li (City University of Hong Kong, Hong Kong); Yuan He (JD.com, China); Eric Zhao (JD.com, China); Jiliang Tang (Michigan State University, USA); Dawei Yin (JD.com, China)

SamWalker: Social Recommendation with Informative Sampling Strategy

Jiawei Chen (Zhejiang University, China); Can Wang (Zhejiang University, China); Sheng Zhou (Zhejiang University, China); Qihao Shi (Zhejiang University, China); Yan Feng (Zhejiang University, China); Chun Chen (Zhejiang University, China)

Generalists and Specialists: Using Community Embeddings to Quantify Activity Diversity in Online Platforms

Isaac Waller (University of Toronto, Canada); Ashton Anderson (University of Toronto, Canada)

10:30-12:30 **Research track:** Topic Modeling and Representation (Grand Ballroom B)

Chair: Svitlana Volkova (Pacific Northwest National Laboratory, US)

ContraVis: Contrastive and Visual Topic Modeling for Comparing Document Collections

Tuan Le (Oakland University, USA); Leman Akoglu (Carnegie Mellon University, USA)

RiSER: Learning Better Representations for Richly Structured Emails

Furkan Kocayusufoglu (University of California Santa Barbara, USA); Ying Sheng (Google, USA); Nguyen Vo (Google, USA); James Wendt (Google, USA); Qi Zhao (Google, USA); Sandeep Tata (Google, USA); Marc Najork (Google, USA)

On Attribution of Recurrent Neural Network Predictions via Additive Decomposition

Mengnan Du (Texas A&M University, USA); Ninghao Liu (Texas A&M University, USA); Fan Yang (Texas A&M University, USA); Shuiwang Ji (Texas A&M University, USA); Xia Hu (Texas A&M University, USA)

Reconciliation k-median: Clustering with Non-Polarized Representatives

Bruno Ordozgoiti (Universidad Politécnic de Madrid, Spain); Aristides Gionis (Aalto University, Finland)

From Stances' Imbalance to their Hierarchical Representation and Detection

Qiang Zhang (University College London, UK); Shangsong Liang (Sun Yat-sen University, China); Aldo Lipani (University College London, UK); Zhaochun Ren (JD.com, China); Emine Yilmaz (University College London, UK)

10:30-12:30 **Research track:** Event Forecasting and Ridesharing (Grand Ballroom C)

Chair: Athina Markopoulou (University of California Irvine, US)

Joint Modeling of Dense and Incomplete Trajectories for Citywide Traffic Volume Inference

Xianfeng Tang (Pennsylvania State University, USA); Boqing Gong (Tencent, USA); Yanwei Yu (Yantai University, China); Huaxiu Yao (Pennsylvania State University, USA); Yandong Li (University of Central Florida, USA); Haiyong Xie (University of Science and Technology of China, China); Xiaoyu Wang (Intellifusion, China)

MiST: A Multiview and Multimodal Spatial-Temporal Learning Framework for Citywide Abnormal Event Forecasting

Chao Huang (University of Notre Dame, USA); Chuxu Zhang (University of Notre Dame, USA); Jiashu Zhao (JD.com, China); Xian Wu (University of Notre Dame, USA); Nitesh Chawla (University of Notre Dame, USA); Dawei Yin (JD.com, China)

Urban Vibes and Rural Charms: Analysis of Geographic Diversity in Mobile Service Usage at National Scale

Rajkarn Singh (University of Edinburgh, UK); Marco Fiore (CNR IEIT, Italy); Mahesh Marina (University of Edinburgh, UK); Alberto Tarable (CNR IEIT, Italy); Alessandro Nordio (CNR IEIT, Italy)

Efficient Ridesharing Order Dispatching with Mean Field Multi-Agent Reinforcement Learning
Minne Li (University College London, UK); Zhiwei Qin (Didi Research America, USA); Yan Jiao (Didi Chuxing, USA); Yaodong Yang (University College London, UK); Zhichen Gong (University College London, UK); Jun Wang (University College London, UK); Chenxi Wang (Didi Research, China); Guobin Wu (Didi Chuxing, China); Jieping Ye (Didi Chuxing, China)

Towards Efficient Sharing: A Usage Balancing Mechanism for Bike Sharing Systems
Shuai Wang (Southeast University, China); Tian He (University of Minnesota, USA); Desheng Zhang (Rutgers University, USA); Yunhuai Liu (Peking University, China); Sang H. Son (Daegu Gyeongbuk Institute of Science and Technology, South Korea)

12:30-14:00 **Food Truck Lunch:** Embarcadero Plaza

14:00-15:30 **Poster Session:** Research Track and Demos (Pacific Concourse)

Chairs: Ashton Anderson (U of Toronto), Joe DeBlasio (Google), Reza Zafarani (Syracuse University)

Alleviating Users' Pain of Waiting: Effective Task Grouping for Online-to-Offline Food Delivery Services
Shenggong Ji (Southwest Jiaotong University, China); Yu Zheng (JD Finance, China); Zhaoyuan Wang (Southwest Jiaotong University, China); Tianrui Li (Southwest Jiaotong University, China)

Outage Prediction and Diagnosis for Cloud Service Systems

Yujun Chen (Beihang University and Microsoft Research, China); Xian Yang (Microsoft, China); Qingwei Lin (Microsoft, China); Hongyu Zhang (University of Newcastle, Australia); Feng Gao (Microsoft, USA); Zhangwei Xu (Microsoft, USA); Yingnong Dang (Microsoft, USA); Dongmei Zhang; Hang Dong; Yong Xu; Hao Li; Yu Kang (Microsoft, China)

Sampled in Pairs and Driven by Text: A New Graph Embedding Framework

Liheng Chen (Shanghai Jiao Tong University, China); Yanru Qu (Shanghai Jiao Tong University, China); Zhenghui Wang (Shanghai Jiao Tong University, China); Lin Qiu (Shanghai Jiao Tong University, China); Weinan Zhang (Shanghai Jiao Tong University, China); Ken Chen (Synyi, China); Shaodian Zhang (Synyi, China); Yong Yu (Shanghai Jiao Tong University, China)

What Is in Your Password? Analyzing Memorable and Secure Passwords using a Tensor Decomposition
Youjin Shin; Simon Woo (State University of New York Korea, South Korea)

Sensitivity Analysis of Centralities on Unweighted Networks

Shogo Murai (University of Tokyo, Japan); Yuichi Yoshida (National Institute of Informatics, Japan)

CBHE: Corner-based Building Height Estimation for Complex Street Scene Images

Yunxiang Zhao (University of Melbourne, Australia); Jianzhong Qi (University of Melbourne, Australia); Rui Zhang (University of Melbourne, Australia)

Using Variability as a Guiding Principle to Reduce Latency in Web Applications via OS Profiling

Amoghavarsha Suresh (State University of New York Stony Brook, USA); Anshul Gandhi (State University of New York Stony Brook, USA)

Recurrent Convolutional Neural Network for Sequential Recommendation

Chengfeng Xu (Soochow University, China); Pengpeng Zhao (Soochow University, China); Yanchi Liu (Rutgers University, USA); Jiajie Xu (Soochow University, China); Victor Sheng (University of Central Arkansas, USA); Zhiming Cui (Suzhou University of Science and Technology, China); Xiaofang Zhou (University of Queensland, Australia); Hui Xiong (State University of New Jersey, USA)

Rock, Rap, or Reggaeton?: Assessing Mexican Immigrants' Cultural Assimilation Using Facebook Data

Ian Stewart (Georgia Institute of Technology, USA); René Flores (University of Chicago, USA); Timothy Riffe (Max Planck Institute for Demographic Research, Germany); Ingmar Weber (Qatar Computing Research Institute, Qatar); Emilio Zagheni (Max Planck Institute for Demographic Research, Germany)

ViTOR: Learning to Rank Webpages Based on Visual Features

Bram van den Akker (University of Amsterdam, Netherlands); Ilya Markov (University of Amsterdam, Netherlands); Maarten de Rijke (University of Amsterdam, Netherlands)

BotCamp: Bot-driven Interactions in Social Campaigns

Noor Abu-El-Rub (University of New Mexico, USA); Abdullah Mueen (University of New Mexico, USA)

Knowledge-Enhanced Ensemble Learning for Word Embeddings

Lanting Fang (Southeast University, China); Yong Luo (Nanyang Technological University, Singapore); Kaiyu Feng (Nanyang Technological University, Singapore); Kaiqi Zhao (Nanyang Technological University, Singapore); Aiqun Hu (Southeast University, China)

STFNets: Learning Sensing Signals from the Time-Frequency Perspective with Short-Time Fourier Neural Networks

Shuochao Yao (University of Illinois Urbana-Champaign, USA); Ailing Piao (University of Washington, USA); Wenjun Jiang (State University of New York Buffalo, USA); Yiran Zhao (University of Illinois Urbana-Champaign, USA); Huajie Shao (University of Illinois Urbana-Champaign, USA); Shengzhong Liu (University of Illinois Urbana-Champaign, USA); Dongxin Liu (University of Illinois Urbana-Champaign, USA); Jinyang Li (University of Illinois Urbana-Champaign, USA); Tianshi Wang (University of Illinois Urbana-Champaign, USA); Shaohan Hu (IBM, USA); Lu Su (State University of New York Buffalo, USA); Jiawei Han & Tarek Abdelzaher (University of Illinois Urbana-Champaign, USA)

A Multi-modal Neural Embeddings Approach for Detecting Mobile Counterfeit Apps

Jathushan Rajasegaran (CSIRO, Australia); Naveen Karunanayake (CSIRO, Australia); Ashanie Gunathillake (University of Sydney, Australia); Suranga Seneviratne (University of Sydney, Australia); Guillaume Jourjon (CSIRO, Australia)

Community detection through likelihood optimization: in search of a sound model

Liudmila Prokhorenkova (Moscow Institute of Physics and Technology and Yandex, Russia); Alexey Tikhonov (Yandex, Russia)

Context-Sensitive Malicious Spelling Error Correction

Hongyu Gong (University of Illinois Urbana-Champaign, USA); Yuchen Li (University of Illinois Urbana-Champaign, USA); Suma Bhat (University of Illinois Urbana-Champaign, USA); Pramod Viswanath (University of Illinois Urbana-Champaign, USA)

Goal-setting And Achievement In Activity Tracking Apps: A Case Study Of MyFitnessPal

Mitchell Gordon (Stanford University, USA); Tim Althoff (Stanford University, USA); Jure Leskovec (Stanford University, USA)

Efficient Ridesharing Order Dispatching with Mean Field Multi-Agent Reinforcement Learning

Minne Li (University College London, UK); Zhiwei Qin (Didi Research America, USA); Yan Jiao (Didi Chuxing, USA); Yaodong Yang (University College London, UK); Zhichen Gong (University College London, UK); Jun Wang (University College London, UK); Chenxi Wang (Didi Research, China); Guobin Wu (Didi Chuxing, China); Jieping Ye (Didi Chuxing, China)

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Studying Preferences and Concerns about Information Disclosure in Email Notifications

Yongsung Kim (Northwestern Univ., USA); Adam Fourney (Microsoft, USA); Ece Kamar (Microsoft, USA)

Improving Treatment Effect Estimators Through Experiment Splitting

Dominic Coey (Facebook, USA); Tom Cunningham (Facebook, USA)

Learning Novelty-Aware Ranking of Answers to Complex Questions

Shahar Harel (Technion - Israel Institute of Technology, Israel); Sefi Albo (Technion - Israel Institute of Technology, Israel); Eugene Agichtein (Emory University, USA); Kira Radinsky (Technion - Israel Institute of Technology, Israel)

Cyberbullying Ends Here: Towards Robust Detection of Cyberbullying in Social Media

Mengfan Yao (State University of New York Albany, USA); Charalampos Chelmiss (State University of New York Albany, USA); Daphney-Stavroula Zois (State University of New York Albany, USA)

Beyond Shortest Paths: Route Recommendations for Ride-sharing

Chak Fai Yuen (Indian Institute of Technology Delhi, India); Abhishek Pratap Singh (Indian Institute of Technology Delhi, India); Sagar Goyal (Indian Institute of Technology Delhi, India); Sayan Ranu (Indian Institute of Technology Delhi, India); Amitabha Bagchi (Indian Institute of Technology Delhi, India)

- Learning Fast Matching Models from Weak Annotations
Xue Li (Microsoft, China); Zhipeng Luo (Microsoft, China); Hao Sun (Microsoft, China); Jianjin Zhang (Microsoft, China); Weihao Han (Microsoft, China); Xianqi Chu (Microsoft, China); Liangjie Zhang (Microsoft, China); Qi Zhang (Microsoft, China)
- A large-scale study of Wikipedia users' quality of experience
Flavia Salutati (Télécom ParisTech, France); Diego Da Hora (Google, Brazil); Gilles Dubuc (Wikimedia Foundation, France); Dario Rossi (Télécom ParisTech, France)
- How Serendipity Improves User Satisfaction with Recommendations? A Large-Scale User Evaluation
Li Chen (Hong Kong Baptist University, Hong Kong); Yonghua Yang (Alibaba Group, China); Ningxia Wang (Hong Kong Baptist University, Hong Kong); Keping Yang (Alibaba Group, China); Quan Yuan (inspirAI, China)
- Reconciliation k-median: Clustering with non-polarized representatives
Bruno Ordozgoiti (Universidad Politécnica de Madrid, Spain); Aristides Gionis (Aalto University, Finland)
- Transfer learning for unsupervised influenza-like illness models from online search data
Bin Zou (University College London, UK); Vasileios Lampos (University College London, UK); Ingemar Cox (University College London, UK)
- Reputation Deflation Through Dynamic Expertise Assessment in Online Labor Markets
Marios Kokkodis (Boston College, USA)
- Language in Our Time: An Empirical Analysis of Hashtags
Yang Zhang (CISPA, Germany)
- Rethinking the detection of child sexual abuse imagery on the Internet
Elie Bursztein (Google, USA); Einat Clarke (Google, USA); Michelle DeLaune (National Center for Missing and Exploited Children, USA); David M. Eliff (National Center for Missing and Exploited Children, USA); Nick Hsu (National Center for Missing and Exploited Children, USA); Lindsey Olson (National Center for Missing and Exploited Children, USA); John Shehan (National Center for Missing and Exploited Children, USA); Madhukar Thakur (Google, USA); Kurt Thomas (Google, USA); Travis Bright (Google, USA)
- HopRank: How Semantic Structure Influences Teleportation in PageRank
Lisette Espín-Noboa (University of Koblenz-Landau, Germany); Florian Lemmerich (RWTH Aachen University, Germany); Markus Strohmaier (RWTH Aachen University, Germany); Mark Musen (Stanford University, USA); Simon Walk (Detego GmbH, Austria)
- Graph Neural Networks for Social Recommendation
Wenqi Fan (City University of Hong Kong, Hong Kong); Yao Ma (Michigan State University, USA); Qing Li (City University of Hong Kong, Hong Kong); Yuan He (JD.com, China); Eric Zhao (JD.com, China); Jiliang Tang (Michigan State University, USA); Dawei Yin (JD.com, China)
- Collaborative Similarity Embedding for Recommender Systems
Chih-Ming Chen (National Chengchi University and Academia Sinica, Taiwan); Chuan-Ju Wang (Academia Sinica, Taiwan); Ming-Feng Tsai (National Chengchi University, Taiwan); Yi-Hsuan Yang (Academia Sinica, Taiwan)
- Pcard: Personalized Restaurants Recommendation from Card Payment Transaction Records
Min Du (University of California Berkeley, USA); Robert Christensen (Visa Research, USA); Wei Zhang (Visa Research, USA); Feifei Li (University of Utah, USA)
- TiSSA: A Time Slice Self-Attention Approach for Modeling Sequential User Behaviors
Chenyi Lei (Alibaba Group, China)
- Debiasing Vandalism Detection Models at Wikidata
Stefan Heindorf (University of Paderborn, Germany); Yan Scholten (University of Paderborn, Germany); Gregor Engels (University of Paderborn, Germany); Martin Potthast (University of Leipzig, Germany)
- User-Video Co-Attention Network for Personalized Micro-video Recommendation
Shang Liu (Wuhan University, China); Zhenzhong Chen (Wuhan University, China); Hongyi Liu (Amazon, USA); Xinghai Hu (Facebook, USA)
- Semantic Hilbert Space for Text Representation Learning
Benyou Wang (University of Padua, Italy); Qiuchi Li (University of Padua, Italy); Massimo Melucci (University of Padua, Italy); Dawei Song (Beijing Institute of Technology, China; Open University, UK)

Focusing Attention Network for Answer Ranking

Yufei Xie (Qiniu AtLab, China); Shuchun Liu (Qiniu AtLab, China); Tangren Yao (Qiniu AtLab, China); Yao Peng (Qiniu AtLab, China); Zhao Lu (East China Normal University, China)

The Chain of Implicit Trust: An Analysis of the Web Third-party Resources Loading

Muhammad Ikram (University of Michigan, USA; Macquarie University, Australia); Rahat Masood (University of New South Wales and Data61, Australia); Gareth Tyson (Queen Mary University of London and Alan Turing Institute, UK); Mohamed Ali Kaafar (Data61 and Macquarie University, Australia); Noha Loizon (Data61, France); Roya Ensafi (University of Michigan, USA)

Product-Aware Helpfulness Prediction of Online Reviews

Miao Fan (Baidu Research, China); Chao Feng (Baidu Research, China); Lin Guo (Baidu Research, China); Mingming Sun (Baidu Research, China); Ping Li (Baidu Research, USA)

What Makes a Good Team? A Large-scale Study on the Effect of Team Composition in Online Gaming

Ziqiang Cheng (Zhejiang University, China); Yang Yang (Zhejiang University, China); Chenhao Tan (University of Colorado Boulder, USA); Denny Cheng (Tencent Corporation, China); Alex Cheng (Tencent Corporation, China); Yueting Zhuang (Zhejiang University, China)

Your Style Your Identity: Leveraging Writing and Photography Styles for Drug Trafficker Identification in Darknet Markets over Attributed Heterogeneous Information Network

Yiming Zhang (West Virginia University, USA); Yujie Fan (West Virginia University, USA); Wei Song (West Virginia University, USA); Shifu Hou (West Virginia University, USA); Yanfang Ye (West Virginia University, USA); Xin Li (West Virginia University, USA); Liang Zhao (George Mason University, USA); Chuan Shi (Beijing University of Posts and Telecommunications, China); Jiabin Wang (Tencent Security Lab, China); Qi Xiong (Tencent Security Lab, China)

Cookie Synchronization: Everything You Always Wanted to Know But Were Afraid to Ask

Panagiotis Papadopoulos (Brave Software, Greece); Nicolas Kourtellis (Telefonica Research, Spain); Evangelos Markatos (FORTH, Greece)

Transfer Meets Hybrid: A Synthetic Approach for Cross-Domain Collaborative Filtering with Text

Guangneng Hu; Yu Zhang; Qiang Yang (Hong Kong University of Science and Technology, China)

On Attribution of Recurrent Neural Network Predictions via Additive Decomposition

Mengnan Du (Texas A&M University, USA); Ninghao Liu (Texas A&M University, USA); Fan Yang (Texas A&M University, USA); Shuiwang Ji (Texas A&M University, USA); Xia Hu (Texas A&M University, USA)

A Neural Bag-of-Words Modelling Framework for Link Prediction in Knowledge Bases with Sparse Connectivity

Fanshuang Kong (Beihang University, China); Richong Zhang (Beihang University, China); Hongyu Guo (National Research Council Canada, Canada); Samuel Mensah (Beihang University, China); Zhiyuan Hu (Beihang University, China); Yongyi Mao (University of Ottawa, Canada)

Distributed Algorithms for Fully Personalized PageRank on Large Graphs

Wenqing Lin (Tencent, China)

ShadowBlock: A Lightweight and Stealthy Adblocking Browser

Shitong Zhu (University of California Riverside, USA); Umar Iqbal (University of Iowa, USA); Zhongjie Wang (University of California Riverside, USA); Zhiyun Qian (University of California Riverside, USA); Zubair Shafiq (University of Iowa, USA); Weiteng Chen (University of California Riverside, USA)

Heterogeneous Graph Attention Network

Xiao Wang; Houye Ji; Chuan Shi & Bai Wang (Beijing University of Posts and Telecommunications, China); Yanfang Ye (West Virginia University, USA); Peng Cui (Tsinghua University, China); Philip S Yu (University of Illinois Chicago, USA)

CommunityGAN: Community Detection with Generative Adversarial Nets

Yuting Jia; Qinqin Zhang; Weinan Zhang; Xinbing Wang (Shanghai Jiao Tong University, China)

Augmenting Knowledge Tracing by Considering Forgetting Behavior

Koki Nagatani (Fuji Xerox, Japan); Qian Zhang (Fuji Xerox, Japan); Masahiro Sato (Fuji Xerox, Japan); Yan-Ying Chen (FX Palo Alto Laboratory, USA); Francine Chen (FX Palo Alto Laboratory, USA); Tomoko Ohkuma (Fuji Xerox, Japan)

- Context-Aware Sequential Recommendations with Stacked Recurrent Neural Networks
Lakshmanan Rakkappan (National University of Singapore, Singapore); Vaibhav Rajan (National University of Singapore, Singapore)
- Domain-Constrained Advertising Keyword Generation
Hao Zhou (Tsinghua University, China); Minlie Huang (Tsinghua University, China); Yishun Mao (Sogou, China); Changlei Zhu (Sogou, China); Peng Shu (Sogou, China); Xiaoyan Zhu (Tsinghua University, China)
- Multistream Classification for Cyber Threat Data with Heterogeneous Feature Space
Yi-Fan Li (University of Texas Dallas, USA); Yang Gao (University of Texas Dallas, USA); Gbadebo Ayoade (University of Texas Dallas, USA); Khan Latifur (University of Texas Dallas, USA); Hemeng Tao (University of Texas Dallas, USA); Bhavani Thuraisingham (University of Texas Dallas, USA)
- Snapshot-based Loading Acceleration of Web Apps with Nondeterministic JavaScript Execution
Jihwan Yeo (Seoul National University, South Korea); Changhyun Shin (Seoul National University, South Korea); Soo-Mook Moon (Seoul National University, South Korea)
- Learning from Multiple Cities: A Meta-Learning Approach for Spatial-Temporal Prediction
Huaxiu Yao (Pennsylvania State University, USA); Yiding Liu (Nanyang Technological University, Singapore); Ying Wei (Tencent, China); Xianfeng Tang (Pennsylvania State University, USA); Zhenhui Li (Pennsylvania State University, USA)
- SamWalker: Social Recommendation with Informative Sampling Strategy
Jiawei Chen (Zhejiang University, China); Can Wang (Zhejiang University, China); Sheng Zhou (Zhejiang University, China); Qihao Shi (Zhejiang University, China); Yan Feng (Zhejiang University, China); Chun Chen (Zhejiang University, China)
- Multi-Domain Gated CNN for Review Helpfulness Prediction
Cen Chen (Ant Financial, Singapore); Minghui Qiu (Singapore Management University, Singapore); Yinfei Yang (Redfin, USA); Jun Zhou (Ant Financial, China); Jun Huang (Alibaba Cloud, China); Xiaolong Li (Ant Financial Group, China); Forrest Sheng Bao (Iowa State University, USA)
- A First Look at Deep Learning Apps on Smartphones
Mengwei Xu (Peking University, China); Jiawei Liu (Peking University, China); Yuanqiang Liu (Peking University, China); Felix Xiaozhu Lin (Purdue University, USA); Yunxin Liu (Microsoft, China); Xuanzhe Liu (Peking University, China)
- The Matthew Effect in Computation Contests: High Difficulty May Lead to 51% Dominance
Yulong Zeng (Nebulas, China); Song Zuo (Google, China)
- Fine-grained Type Inference in Knowledge Graphs via Probabilistic and Tensor Factorization Methods
A B M Moniruzzaman (Queensland University of Technology, Australia); Richi Nayak (Queensland University of Technology, Australia); Maolin Tang (Queensland University of Technology, Australia); Thirunavukarasu Balasubramaniam (Queensland University of Technology, Australia)
- Scalpel-CD: Leveraging Crowdsourcing and Deep Probabilistic Modeling for Debugging Noisy Training Data
Jie Yang; Alisa Smirnova; Dingqi Yang (University of Fribourg, Switzerland); Gianluca Demartini (University of Queensland, Australia); Yuan Lu (ING Bank, Netherlands); Philippe Cudre-Mauroux (University of Fribourg, Switzerland)
- Nameles: An intelligent system for Real-Time Filtering of Invalid Ad Traffic
Antonio Pastor (Universidad Carlos III de Madrid, Spain); Matti Pärssinen (Aalto University, Finland); Patricia Callejo, Pelayo Vallina, Rubén Cuevas, Ángel Cuevas (Universidad Carlos III de Madrid, Spain); Mikko Kotila (Botlab, USA); Arturo Azcorra (Universidad Carlos III de Madrid, Spain)
- Genre Differences of Song Lyrics and Artist Wikis: An Analysis of Popularity, Length, Repetitiveness, and Readability
Markus Schedl (Johannes Kepler University, Austria)
- Web Experience in Operational Mobile Networks: Lessons from Two Million Page Visits
Mohammad Rajiullah (Karlstad University, Sweden); Andra Lutu (Telefonica Research, Spain); Ali Safari Khatouni (Politecnico di Torino, Italy); Mah-Rukh Fida (University of Edinburgh, UK); Marco Mellia (Politecnico di Torino, Italy); Anna Brunstrom (Karlstad University, Sweden); Ozgu Alay (Simula Research Laboratory, Norway); Stefan Alfredsson (Karlstad University, Sweden); Vincenzo Mancuso (IMDEA Networks Institute, Spain)

Variational Session-based Recommendation Using Normalizing Flows

Fan Zhou (University of Science and Technology of China, China); Zijng Wen (University of Science and Technology of China, China); Kunpeng Zhang (University of Maryland, USA); Goce Trajceviski (Iowa State University, USA); Ting Zhong (University of Science and Technology of China, China)

ContraVis: Contrastive and Visual Topic Modeling for Comparing Document Collections

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Joint Modeling of Dense and Incomplete Trajectories for Citywide Traffic Volume Inference

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Tag2Vec: Learning Tag Representations in Tag Networks

Junshan Wang (Peking University, China); Zhicong Lu (Peking University, China); Guojie Song (Peking University, China); Yue Fan (Peking University, China); Lun Du (Peking University, China)

A Novel Generative Topic Embedding Model by Introducing Network Communities

Di Jin (Tianjin University, China); Jiantao Huang (Tianjin University, China); Pengfei Jiao (Tianjin University, China); Liang Yang (Hebei University of Technology, China); Dongxiao He (Tianjin University, China); Franoise Soulie-Fogelman (Tianjin University, China); Yuxiao Huang (George Washington University, USA)

Evaluating User Actions as a Proxy for Email Significance

Tarfah Alrashed (Massachusetts Institute of Technology, USA); Chia-Jung Lee (Microsoft, USA); Peter Bailey (Microsoft, Australia); Christopher Lin (Microsoft, USA); Milad Shokouhi (Microsoft, USA); Susan Dumais (Microsoft, USA)

Unsupervised Semantic Generative Adversarial Networks for Expert Retrieval

Shangsong Liang (Sun Yat-sen University, China)

Link Prediction in Networks with Core-Fringe Data

Austin Benson (Cornell University, USA); Jon Kleinberg (Cornell University, USA)

Search Mindsets: Understanding Focused and Non-Focused Information Seeking in Music Search

Ang Li (University of Pittsburgh, USA); Jennifer Thom (Spotify, USA); Praveen Chandar (Spotify, USA); Christine Hosey (Spotify, USA); Brian St. Thomas (Spotify, USA); Jean Garcia-Gathright (Spotify, USA)

Urban Vibes and Rural Charms: Analysis of Geographic Diversity in Mobile Service Usage at National Scale

Rajkarn Singh (University of Edinburgh, UK); Marco Fiore (CNR IEIT, Italy); Mahesh Marina (University of Edinburgh, UK); Alberto Tarable (CNR IEIT, Italy); Alessandro Nordio (CNR IEIT, Italy)

Evaluating Neural Text Simplification in the Medical Domain

Laurens van den Bercken (Delft University of Technology and myTomorrows, Netherlands); Robert-Jan Sips (myTomorrows, Netherlands); Christoph Lofl (Delft University of Technology, Netherlands)

Generative Graph Models based on Laplacian Spectra

Alana Shine; David Kempe (University of Southern California, USA)

Modeling Dynamic Networks of Timestamped Relational Events using Point Process Block Models

Ruthwik Junuthula (University of Toledo, USA); Maysam Haghdan (University of Toledo, USA); Kevin S. Xu (University of Toledo, USA); Vijay Devabhaktuni (University of Toledo, USA)

Modeling Heart Rate and Activity Data for Personalized Fitness Recommendation

Jianmo Ni (University of California San Diego, USA); Larry Muhlsteln (University of California San Diego, USA); Julian McAuley (University of California San Diego, USA)

Semi-Supervised Entity Alignment via Knowledge Graph Embedding with Awareness of Degree Difference

Shichao Pei; Lu Yu; Robert Hoehndorf; Xiangliang Zhang (King Abdullah University of Science and Technology, Saudi Arabia)

Bayesian Exploration with Heterogeneous Agents

Nicole Immorlica (Microsoft, USA); Jieming Mao (University of Pennsylvania, USA); Aleksandrs Slivkins (Microsoft, USA); Zhiwei Steven Wu (University of Minnesota, USA)

Towards Neural Mixture Recommender for Long Range Dependent User Sequences

Jiaxi Tang (Simon Fraser University, Canada); Francois Belletti (Google, USA); Sagar Jain (Google, USA); Minmin Chen (Google, USA); Alex Beutel (Google, USA); Can Xu (Google, USA); Ed H. Chi (Google, USA)

e-Diagnosis: Unsupervised and Real-time Diagnosis of Small-window Long-tail Latency in Large-scale Microservice Platforms

Huasong Shan (JD.com, USA); Yuan Chen (JD.com, USA); Haifeng Liu (JD.com, China); Yunpeng Zhang (JD.com, China); Xiao Xiao (JD.com, China); Xiaofeng He (JD.com, China); Min Li (JD.com, USA); Wei Ding (JD.com, USA)

VACCINE: Using Contextual Integrity For Data Leakage Detection

Yan Shvartzshnaider (New York University, USA); Zvonimir Pavlinovic (New York University, USA); Ananth Balashankar (New York University, USA); Thomas Wies (New York University, USA); Lakshminarayanan Subramanian (New York University, USA); Helen Nissenbaum (Cornell Tech, USA); Prateek Mittal (Princeton University, USA)

SciLens: Evaluating the Quality of Scientific News Articles Using Social Media and Scientific Literature Indicators

Panayiotis Smeros (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Carlos Castillo (Universitat Pompeu Fabra, Spain); Karl Aberer (Ecole Polytechnique Fédérale de Lausanne, Switzerland)

Efficient Path Prediction for Semi-Supervised and Weakly Supervised Hierarchical Text Classification

Huiru Xiao; Xin Liu; Yangqiu Song (Hong Kong University of Science and Technology, Hong Kong)

Splitter: Learning Node Representations that Capture Multiple Social Contexts

Alessandro Epasto (Google, USA); Bryan Perozzi (Google, USA)

Learning from On-Line User Feedback in Neural Question Answering on the Web

Bernhard Kratzwald (ETH Zurich, Switzerland); Stefan Feuerriegel (ETH Zurich, Switzerland)

Choosing to grow a graph: modeling network formation as discrete choice

Jan Overgoor (Stanford University, USA); Austin Benson (Cornell University, USA); Johan Ugander (Stanford University, USA)

Pythia: a Framework for Automatic Analysis of Web Hosting Environments

Srdjan Matic (University College London, UK); Gareth Tyson (Queen Mary University of London, UK); Gianluca Stringhini (Boston University, USA)

DDGK: Learning Graph Representations via Deep Divergence Graph Kernels

Rami Al-Rfou (Google AI, USA); Bryan Perozzi (Google AI, USA); Dustin Zelle (Google AI, USA)

Towards Predicting a Realisation of an Information Need based on Brain Signals

Yashar Moshfeghi (University of Strathclyde, UK); Frank Pollick (University of Glasgow, UK)

Are All Successful Communities Alike? Characterizing and Predicting the Success of Online Communities

Tiago Cunha (University of Michigan, USA); David Jurgens (University of Michigan, USA); Chenhao Tan (University of Colorado Boulder, USA); Daniel Romero (University of Michigan, USA)

Dynamic Deep Multi-modal Fusion for Image Sharing

Ashwini Tonge (Kansas State University, USA); Cornelia Caragea (University of Illinois Chicago, USA)

Learning Edge Properties in Graphs from Path Aggregations

Rakshit Agrawal; Luca de Alfaro (University of California Santa Cruz, USA)

Keyphrase Extraction from Disaster-related Tweets

Jishnu Ray Chowdhury (Kansas State University, USA); Cornelia Caragea (University of Illinois Chicago, USA); Doina Caragea (Kansas State University, USA)

HAR: A Hierarchical Attention Retrieval Model for Healthcare Question Answering

Ming Zhu (Virginia Tech, USA); Aman Ahuja (Virginia Tech, USA); Wei Wei (Google, USA); Chandan K. Reddy (Virginia Tech, USA)

Unifying Knowledge Graph Learning and Recommendation: Towards a Better Understanding of User Preference

Yixin Cao; Xiang Wang; Xiangnan He; Zikun Hu; Tat-Seng Chua (National Univ. of Singapore, Singapore)

Semantic Text Matching for Long-Form Documents

Jyun-Yu Jiang (UCLA, USA); Mingyang Zhang (Google, USA); Cheng Li (Google, USA); Michael Bendersky (Google, USA); Nadav Golbandi (Google, USA); Marc Najork (Google, USA)

Pruning based Distance Sketches with Provable Guarantees on Random Graphs

Hongyang Zhang (Stanford University, USA); Huacheng Yu (Harvard University, USA); Ashish Goel (Stanford University, USA)

Bootstrapping Domain-Specific Content Discovery on the Web

Kien Pham (New York University, USA); Aecio Santos (New York University, USA); Juliana Freire (New York University, USA)

Learning Semantic Models of Data Sources using Probabilistic Graphical Models

Binh Vu (University of Southern California, USA); Craig Knoblock (University of Southern California, USA); Jay Pujara (University of Southern California, USA)

Iterative Discriminant Tensor Factorization for Behavior Comparison in Massive Open Online Courses

Xidao Wen (University of Pittsburgh, USA); Yu-Ru Lin (University of Pittsburgh, USA); Xi Liu (Texas A&M University, USA); Peter Brusilovsky; Jordan Barria Pineda (University of Pittsburgh, USA)

How Do Your Neighbors Disclose Your Information: Social-Aware Time Series Imputation

Zongtao Liu (Zhejiang University, China); Yang Yang (Zhejiang University, China); Wei Huang (Zhejiang University, China); Zhongyi Tang (State Grid, China); Ning Li (State Grid, China); Fei Wu (Zhejiang University, China)

Multi-relational Network Embeddings with Relational Proximity and Node Attributes

Ming-Han Feng (National Taiwan University, Taiwan); Chin-Chi Hsu (Academia Sinica, Taiwan); Cheng-Te Li (National Cheng Kung University, Taiwan); Mi-Yen Yeh (Academia Sinica, Taiwan); Shou-De Lin (National Taiwan University, Taiwan)

TurkScanner: Predicting the Hourly Wage of Microtasks

Susumu Saito (Waseda University, Japan); Chun-Wei Chiang (West Virginia University, USA); Saiph Savage (West Virginia University, USA); Teppei Nakano (Waseda University, Japan); Tetsunori Kobayashi (Waseda University, Japan); Jeffrey Bigham (Carnegie Mellon University, USA)

Reply-aided Detection of Misinformation via Bayesian Deep Learning

Qiang Zhang (University College London, UK); Aldo Lipani (University College London, UK); Shangsong Liang (University College London, UK); Emine Yilmaz (University College London, UK)

Constrained Local Graph Clustering by Colored Random Walk

Yaowei Yan (Pennsylvania State University, USA); Yuchen Bian (Pennsylvania State University, USA); Dongsheng Luo (Pennsylvania State University, USA); Dongwon Lee (Pennsylvania State University, USA); Xiang Zhang (Pennsylvania State University, USA)

RISER: Learning Better Representations for Richly Structured Emails

Furkan Kocayusufoglu (University of California Santa Barbara, USA); Ying Sheng; Nguyen Vo; James Wendt; Qi Zhao; Sandeep Tata; Marc Najork (Google, USA)

On Convexity and Bounds of Fairness-aware Classification

Yongkai Wu (University of Arkansas, USA); Lu Zhang (University of Arkansas, USA); Xintao Wu (University of Arkansas, USA)

From Stances' Imbalance to their Hierarchical Representation and Detection

Qiang Zhang (University College London, UK); Shangsong Liang (Sun Yat-sen University, China); Aldo Lipani (University College London, UK); Zhaochun Ren (JD.com, China); Emine Yilmaz (University College London, UK)

Generalists and Specialists: Using Community Embeddings to Quantify Activity Diversity in Online Platforms

Isaac Waller (University of Toronto, Canada); Ashton Anderson (University of Toronto, Canada)

MiST: A Multiview and Multimodal Spatial-Temporal Learning Framework for Citywide Abnormal Event Forecasting

Chao Huang (University of Notre Dame, USA); Chuxu Zhang (University of Notre Dame, USA); Jiashu Zhao (JD.com, China); Xian Wu (University of Notre Dame, USA); Nitesh Chawla (University of Notre Dame, USA); Dawei Yin (JD.com, China)

Shapley meets Uniform: An Axiomatic Framework for Attribution in Online Advertising

Raghav Singal (Columbia University, USA); Omar Besbes (Columbia University, USA); Antoine Desir (INSEAD, France); Vineet Goyal (Columbia University, USA); Garud Iyengar (Columbia University, USA)

Sarcasm Detection with Self-matching Networks and Low-rank Bilinear Pooling

Tao Xiong (Alibaba Group, China); Peiran Zhang (Alibaba Group, China); Hongbo Zhu (Alibaba Group, China); Yihui Yang (AfterPay, China)

Learning to Generate Questions by Learning What not to Generate

Bang Liu (University of Alberta, Canada); Mingjun Zhao (University of Alberta, Canada); Di Niu (University of Alberta, Canada); Kunfeng Lai (Hong Kong Polytechnic University, China); Yancheng He (Tencent, China); Haojie Wei (Tencent, China); Yu Xu (Tencent, China)

Multiple Treatment Effect Estimation using Deep Generative Model with Task Embedding

Shiv Kumar Saini (Adobe Research, India); Sunny Dhamnani (Adobe Research, India); Aakash S (Indian Institute of Technology Madras, India); Akil Arif Ibrahim (Indian Institute of Technology Roorkee, India); Prithviraj Chavan (Adobe, India)

Decoupled smoothing on graphs

Alex Chin (Stanford University, USA); Yatong Chen (Stanford University, USA); Kristen M. Altenburger (Stanford University, USA); Johan Ugander (Stanford University, USA)

Improving Multiclass Classification in Crowdsourcing by Using Hierarchical Schemes

Xiaoni Duan (Kyoto University, Japan); Keishi Tajima (Kyoto University, Japan)

Aspect-level Sentiment Analysis using AS-Capsules

Yequan Wang (Tsinghua University, China); Aixin Sun (Nanyang Technological University, Singapore); Minlie Huang (Tsinghua University, China); Xiaoyan Zhu (Tsinghua University, China)

Large Scale Semantic Indexing with Deep Level-wise Extreme Multi-label Learning

Dingcheng Li (Baidu, USA); Jingyuan Zhang (Baidu, USA); Ping Li (Baidu, USA)

Tablepedia: Automating PDF Table Reading in an Experimental Evidence Exploration and Analytic System

Wenhao Yu, Zongze Li, Qingkai Zeng, and Meng Jiang

Gradual Machine Learning for Entity Resolution

Boyi Hou, Qun Chen, Xin Liu, Ping Zhong, Yanyan Wang, Zhaoqiang Chen, and Zhanhuai Li

Tracy: Tracing Facts over Knowledge Graphs and Text

Mohamed H. Gad-Elrab, Daria Stepanova, Jacopo Urbani, and Gerhard Weikum

Graph-based Interactive Data Federation System for Heterogeneous Data Retrieval and Analytics

Xuan-Son Vu, Addi Ait-Mlouk, Erik Elmroth, and Lili Jiang

CityFlow: A Multi-Agent Reinforcement Learning Environment for Large Scale City Traffic Scenario

Huichu Zhang, Siyuan Feng, Chang Liu, Yaoyao Ding, Yichen Zhu, Zihan Zhou, Weinan Zhang, Yong Yu, Haiming Jin, and Zhenhui Li

LearnerExp: Exploring and Explaining the Time Management of Online Learning Activity

Huan He, Qinghua Zheng, and Bo Dong

UNVEIL: Capture and Visualise the data leakage through WiFi in Mobile Devices

Shubham Jain, Eden Bensaid, and Yves-Alexandre de Montjoye

TaxVis: A Visual System for Detecting Tax Evasion Group

Yu Hongchao, Huan He, Qinghua Zheng, and Bo Dong

16:00-17:00 **Panel:** Thirty Years of the Web

Moderator: Tom Simonite (WIRED, USA)

Panelists:

Robert Calliau (formerly at CERN, Switzerland)

Jaime Teevan (Microsoft, USA)

TBA

17:00-17:39 **Closing Ceremony**

Chairs: Ricardo Baeza-Yates & Leila Zia

Summary of the conference, best paper awards ceremony and presentation of The Web Conference 2020 in Taiwan.

Conference Schedule

Designing an Ethical Web - Special Track – Friday, May 17

Bayview A+B

10:30-10:35	Sharad Goel (Stanford University), Deirdre Mulligan (UC Berkeley School of Information)	Opening remarks
10:35-11:05	Timnit Gebru (Google)	Towards transparency in AI: Methods and Challenges
11:05-11:35	Jenna Burrell (UC Berkeley)	When Users Control the Algorithms: Values expressed in practices on Twitter
11:35-12:30	Deirdre Mulligan (UC Berkeley School of Information)	Engineers and the Just Web
14:00-15:20	Panelists: Alan Davidson (Mozilla), Arvind Narayanan (Princeton University), Katie Shilton (University of Maryland)	Panel: The Role of technical standards for Human Rights
15:20-15:30	Sharad Goel (Stanford University), Deirdre Mulligan (UC Berkeley School of Information)	Closing remarks

Note: For more detail about the schedule please check the website (<http://www2019.thewebconf.org/>) or download the app.

	12	SUN	13	MON	14	TUE	15	WED	16	THU	17	FRI
7:00						Registration starts						
8:00							Registration starts					
9:00				Workshops & Tutorials	W4A	Workshops & Tutorials	W4A	Keynote: Jeff Dean	Keynote: Claire Wardle	Keynote: Lawrence Lessig		
10:00				Coffee break		Coffee break		Coffee break			Coffee break	
11:00				Workshops & Tutorials	W4A	Workshops & Tutorials	W4A	Web of Health	Research Tracks	Research Tracks	Research Tracks	Designing an Ethical Web
12:00				Lunch		Lunch		Lunch			Lunch	
13:00						PhD Consortium (by invitation)						
14:00				Workshops & Tutorials	W4A	Workshops & Tutorials	W4A	Web of Health	Posters & Demos (inc. PhD Consortium)	Posters & Demos	Posters & Demos	Designing an Ethical Web
15:00				Coffee break		Coffee break		Coffee break			Coffee break	
16:00				Workshops & Tutorials	W4A	Workshops & Tutorials	W4A	Web of Health	Research Tracks	Research Tracks	Research Tracks	30 Years of the Web Panel & Closing Ceremony
17:00												
18:00				Welcome Reception						TheWebConf Town Hall		
19:00								Conference Dinner at Exploratorium				
20:00												
21:00												

Note: Exhibition will be open Tuesday to Thursday from 10AM to 5:30PM, and Friday from 10AM to 1PM.

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