

# Information Theoretic Tools for Social Media

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## Abstract

Information theory provides a powerful set of tools for discovering relationships among variables with minimal assumptions. Social media platforms provide a rich source of information that can include temporal, spatial, textual, and network information. What are the interesting information theoretic measures for social media and how can we estimate these quantities? I will discuss how measures like information transfer can be used to quantify how predictive some variables are, e.g., how well one user's activity can predict another's. I will also discuss techniques for estimating entropies even when the data are sparse, as is the case for spatio-temporal events, or very high-dimensional, as is the case for textual information.