Using Big Data, Social Networks, and Agent-Based Modeling to Understand Information Diffusion

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Abstract:
With the increasing abundance of 'digital footprints' left by human interactions in online environments, e.g., social media and app use, the ability to model such behavior has become increasingly possible. Many approaches have been proposed, however, most previous model frameworks are fairly restrictive, and often the models are not directly compared on a diverse collection of human behavior. We will explore a new modeling approach that enables the creation of models directly from data with no previous restrictions on the data. We will explore the application of this method to three different problems: (1) the prediction of individual activity on social media, (2) the forecasting of optimal messaging times on social media, and (3) understanding marketing channel attribution. We will explore this in the context of large-scale, individual level collections of consumer and user behavior. This work illustrates the power and usefulness of an individual-level approach to modeling and understanding large datasets.

The LAS is charged with developing the science of analysis and analytic methodologies. This simultaneous study of tradecraft and technology serves as the foundation upon which all LAS efforts are positioned.