

Title: Interpersonal Trust Dynamics in Online Systems – Models and Applications

Speaker: Jaideep Srivastava, Professor – University of Minnesota

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Abstract: Understanding the nature of online interpersonal trust continues to gain importance, especially as we increasingly perform activities and form relationships online. Trust forms a critical substrate on which activities with economic consequence, e.g. e-commerce transactions, or relationships with emotional consequence, e.g. friendships and romances, are built. There is a vast literature on interpersonal trust in the social sciences. However, with the mass adoption of the Internet in our daily lives, and the ability to capture high resolution data on its use, we are at the threshold of a deeper understanding of the dynamics behind interpersonal trust. It is now becoming possible to study the phenomenon of trust dynamics at a much finer granularity than ever before. Online social systems such as Multiplayer Online Games (MOGs) and Virtual Worlds (VWs) have become increasingly popular and have communities comprising tens of millions. They serve as unprecedented tools to theorize and empirically model the trust dynamics of individuals, groups, and networks within large communities. This talk consists of four parts. First, we describe findings from the Virtual World Exploratorium; a multi-institutional, multi-disciplinary project which uses data from commercial MMOGs and VWs to study many fields of social science, including sociology, social psychology, organization theory, group dynamics, macro-economics, etc. Second, describe a model for a multi-relational, multi-activity environment, where ‘low familiarity threshold’ activities like chatting, grouping, and transactions form the scaffolding for the formation of ‘high familiarity threshold’ relationships like trust formation. Third, using this model, we describe our studies on the dynamics of online interpersonal trust, including like trust formation, trust reciprocation, trust revocation, and the nature of trust transitivity and trust cascading. Finally, we describe some applications of this model for tasks like understanding the vulnerabilities of a social network to rumor spreading, and inoculation against it.

Bio: Jaideep Srivastava (<https://www.linkedin.com/in/jaideep-srivastava-50230/>) is Professor of Computer Science at the University of Minnesota, where he directs a laboratory focusing on research in Web Mining, Social Analytics, and Health Analytics. He is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), and has been an IEEE Distinguished Visitor and a Distinguished Fellow of Allina’s Center for Healthcare Innovation. He has been awarded the Distinguished Research Contributions Award of the PAKDD, for his lifetime contributions to the field of machine learning and data mining. He has supervised 39 PhD dissertations, and over 65 MS theses. He has also mentored a number of post-doctoral fellows and junior scientists in the industry and academia. He has authored or co-authored over 420 papers in journals and conferences, and filed 8 patents. Seven of his papers have won best paper awards, and he has a Google Scholar citation count of over 24,600 and an h-index of 55. Dr. Srivastava is currently co-leading a multi-institutional, multi-disciplinary project in the rapidly emerging area of social computing (<http://www.aurumahmad.com/vwo/>). His research has been supported by a broad range of government agencies, including NSF, NASA, ARDA, DARPA, IARPA, NIH, CDC, US Army, US Air Force, and MNDOT; and industries, including IBM, United Technologies, Eaton, Honeywell, Cargill, Allina and Huawei. He is a regular participant in the evaluation committees of various US and international funding agencies, on the organizing and steering committees of various international scientific forums, and on the editorial boards of a number of journals. Dr. Srivastava has significant experience in the industry, in both consulting and executive roles. Most recently he was the Chief Scientist for Qatar Computing Research Institute (QCRI), which is part of Qatar Foundation. Earlier, he was the data mining architect for Amazon.com (www.amazon.com), built a data analytics department at Yodlee (www.yodlee.com), and served as the Chief Technology Officer for Persistent

Systems (www.persistentsys.com). He has provided technology and strategy advice to Cargill, United Technologies, IBM, Honeywell, KPMG, 3M, TCS, Cargill and Eaton. Dr. Srivastava Co-Founded Ninja Metrics (www.ninjametrics.com), based on his research in behavioral analytics. He was advisor and Chief Scientist for CogCubed (www.cogcubed.com), an innovative company with the goal to revolutionize the diagnosis and therapy of cognitive disorders through the use of online games, which was subsequently acquired by Teladoc (<https://www.teladoc.com/>), a public company. He is presently a technology advisor to a number of startups at various stages, including Jornaya (<https://www.jornaya.com/>) - a leader in cross-industry lead management, Kipsu (<http://kipsu.com/>) - which provides an innovative solution to improving service quality in the hospitality industry, and G2lytics (<https://g2lytics.com/>) – an organization that uses machine learning and blockchain technologies to identify tax compliance problems. Dr. Srivastava has held distinguished professorships at Heilongjiang University and Wuhan University, China. He has held advisory positions with the State of Minnesota, and the State of Maharashtra, India. He is an advisor to the Unique ID (UID) project of the Government of India, whose goal is to provide biometrics-based social security numbers to the 1.25+ billion citizens of India. Dr. Srivastava has delivered over 170 invited talks in over 35 countries, including more than a dozen keynote addresses at major international conferences. He has a Bachelors of Technology from the Indian Institute of Technology (IIT), Kanpur, India, and MS and PhD from the University of California, Berkeley.