Information Diffusion on Social Networks: *From the Traditional Setting to the Future Blockchain-Based*

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Abstract.

Information diffusion in online social networks (OSN) is one of the most fundamental understanding which underlies many problems such as viral marketing, rumor propagation, disinformation, and privacy issues. With the recent surged in popularity of blockchain, blockchain based OSNs have drawn our attention with a promise of a new serverless Internet and new decentralized web future, in which users are in control of their own data, identity, and destiny.

This tutorial will cover two parts. We first discuss various optimization models and solutions to the information diffusion problem in the traditional setting OSNs such as Facebook and Twitter. We will cover a huge amount of efforts in the literature, focused on the Influence Maximization and Limiting Misinformation problems. Audience will learn the evolution of those solutions and how we can obtain scalable solutions in billion-scale networks. The second part devotes to the background of blockchain, its challenges to realize the blockchain-based OSNs and how information diffuse on such a future network.

Bio.

Prof. My T. Thai is a UF Research Foundation Professor and Associate Chair for Research in the Department of Computer and Information Sciences and Engineering at the University of Florida. Her current research interests are on scalable algorithms, big data analysis, cybersecurity, and optimization in network science and engineering, including communication networks, smart grids, social networks, and their interdependency. The results of her work have led to 6 books and 140+ articles published in leading journals and conferences, including IEEE MSN 2014 Best Paper Award, IEEE ICDCS 2017 Best Paper Nominee, and 2017 IEEE ICDM Best Papers Award.

Prof. Thai has engaged in many professional activities. She has been a TPC-chair for many IEEE conferences, has served as an associate editor for Journal of Combinatorial Optimization (JOCO), IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Network Science and Engineering, and a series editor of Springer Briefs in Optimization. She is also a founding EiC of the Computational Social Networks journal. She has received many research awards including an UF Provosts Excellence Award for Assistant Professors, UF Term Professorship Award, UFRF Professorship Award, a Department of Defense (DoD) Young Investigator Award, and an NSF (National Science Foundation) CAREER Award.