

## "Minimum-Multiplicity Routing Problems in Multimedia Communications"

Speaker: Shengli Yuan

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Host: Rong Zheng

Abstract: In this work, we investigate the routing problems of minimizing the number of distinct transmission mediums or carrier domains for multimedia communications. We consider the problems of two party connection as well as three-or-more-party connections. By minimizing the number of distinct transmission mediums or carrier domains on the connections, rather than minimizing bandwidth, length or hop counts, the network carriers may achieve higher cost savings on connection provisioning and management. These problems are proven to be NP-hard. Heuristic algorithms are proposed for larger instances of the problems and evaluated through simulations<sup>1</sup>.

Bio: Shengli Yuan received his BS in EE from Fudan University in Shanghai, China. He received MS in EE from the University of Missouri at Columbia and Ph.D in Computer Science from the University of Texas at Dallas. He had nearly a decade working experience in the computer and telecommunication industry. He is now an assistant professor at the University of Houston - Downtown. His research interests include network reliability, routing algorithms, optical and wireless networks.