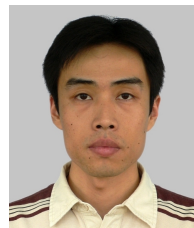


traffic loads and switches to TDMA mode for high contention levels associated with heavy traffic loads. We also noted that LA-MAC offers an improved performance by utilizing a cross-layer PHY-MAC design to control the mode switching behavior of the protocol based on actual collisions as opposed to frame corruptions related to wireless link effects. We analyzed the throughput of LA-MAC and implemented the protocol in an experimental MANET testbed formed by a collection of USRP-based SDR nodes. Our analytical and experimental results revealed the fact that LA-MAC achieves a better throughput performance than TDMA over both one- and two-hop MIMO MANET topologies when the traffic load allows nodes to compete for unused time slots. Further, the experiments revealed that LA-MAC offers both latency and throughput advantages over CSMA. Currently, we are extending LA-MAC as an anycast MAC protocol such that it can assist routing decisions by passing link quality information to the NETWORK layer. Such cross-layer design can improve routing performance in both tie breaker and standard routing cost measurement scenarios.

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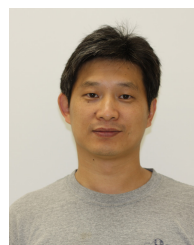


Weihong Hu received his B.S. degree in Communication Engineering from Beijing University of Posts and Telecommunications, Beijing, China in 2001 and his M.S. degree in Electrical and Computer Engineering from University of California, Irvine in 2009. Currently, he is a Ph.D. candidate in the department of Electrical Engineering and Computer Science at University of California, Irvine. His research interests are in the areas of software-defined radio, cross-layer MAC protocol design, and optimization for Mobile Ad Hoc Networks.



Homayoun Yousefi'zadeh is an Associate Adjunct Professor at the Department of EECS at UC, Irvine. He also holds a Consulting Chief Technologist position at the Boeing Company. In the recent past, he was the CTO of TierFleet, a Senior Technical and Business Manager at Procom Technology, and a Technical Consultant at NEC Electronics. He is the inventor of several US patents, has published more than sixty scholarly reviewed articles, and authored more than twenty design articles associated with deployed industry products. Dr. Yousefi'zadeh is

with the editorial board of IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS and *Journal of Communications Networks*. Previously, he served as an editor of IEEE COMMUNICATIONS LETTERS, an editor of *IEEE Wireless Communications Magazine*, the lead guest editor of IEEE JSTSP the issue of April 2008, and the track chair as well as the TPC member of various IEEE and ACM conferences. He was the founding Chairperson of systems' management workgroup of the Storage Networking Industry Association, a member of the scientific advisory board of Integrated Media Services Center at the University of Southern California (USC), and a member of American Management Association. He received the Ph.D. degree from the Dept. of EE-Systems at USC in 1997.



Xiaolong Li is currently a Research Specialist at the Department of EECS at UC, Irvine. He received his MS degree from the department of Computer Science and Engineering at the University of Notre Dame in 2006, and his Ph.D. from the department of EECS at the University of California, Irvine in 2009. His research interests are in the area of wireless congestion control and wireless routing. Xiaolong is a member of IEEE.