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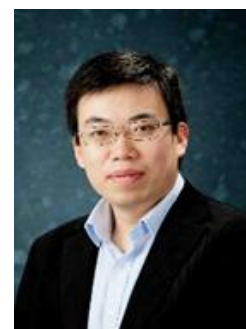
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Incentive Mechanisms for User-Provided Networks

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Abstract:

The fast growing mobile data demands and the proliferation of advanced mobile devices lead to the emergence of user-provided networks (UPNs), which improve user experiences by exploiting the diverse communication needs and resources of different users. The success of UPNs, however, relies on carefully designed incentive mechanisms that effectively encourage voluntary participation and cooperation of users. Motivated by recently launched UPN business models, in this talk we will introduce two new mobile UPN incentive mechanisms that take users' energy consumption and data usage costs into consideration. The first one is motivated by the social bandwidth trading scheme pioneered by Karma (<https://yourkarma.com/>), and we design an optimal hybrid pricing scheme that combines usage-based data pricing and quota reimbursement for network-assisted mobile UPNs. The second one is motivated by the crowd-sourced Internet connectivity enabled by OpenGarden (<https://opengarden.com/>), and we design a virtual currency based scheme that incentivizes cooperation in autonomous mobile UPNs. For more information, please see <http://ncel.ie.cuhk.edu.hk/content/user-provided-networks>.

Biography:

Jianwei Huang is an Associate Professor and Director of the Network Communications and Economics Lab (ncel.ie.cuhk.edu.hk), in the Department of Information Engineering at the Chinese University of Hong Kong. He received Ph.D. from Northwestern University in 2005, and worked as a Postdoc Research Associate at Princeton University during 2005–2007. His main research interests are in the area of network economics and games, with applications in wireless communications, networking, and smart grid. He is a Senior Member of IEEE, and a Distinguished Lecturer of IEEE Communications Society (2015–2016). Dr. Huang is the co-recipient of 8 Best Paper Awards. He received the IEEE ComSoc Asia-Pacific Outstanding Young Researcher Award in 2009. He has co-authored four books. He is a co-author of five ESI Highly Cited Papers. Dr. Huang has served as an Editor of IEEE Transactions on Cognitive Communications and Networking (2015-), Editor of IEEE Transactions on Wireless Communications (2010–2015), Editor of IEEE Journal on Selected Areas in Communications - Cognitive Radio Series (2011–2014), Editor and Associate Editor-in-Chief of IEEE Communications Society Technology News (2012–2014). networking conferences such as INFOCOM and MobiHoc. He is the recipient of IEEE ComSoc Multimedia Communications Technical Committee Distinguished Service Award in 2015 and IEEE GLOBECOM Outstanding Service Award in 2010.