

◆ Title

Incentive Mechanisms for User-Provided Networks

◆ Lecturer

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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. A three-hour tutorial version of this talk can be found at <http://jianwei.ie.cuhk.edu.hk/Files/UPN-Tutorial.pdf>. For more information, please see <http://ncel.ie.cuhk.edu.hk/content/user-provided-networks>.

◆ Presenter Biography

Jianwei Huang (IEEE S'01-M'06-SM'11-F'16) 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 Bachelor from Southeast University in 2000, Master and Ph.D. from

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