IEEE WCNC 2013 Workshop on

Mobile Cloud Computing and Mobile Traffic Modeling

Technical Program

Sunday, 7th April 2013, Shanghai, China

Cloud computing is on the hype but largely confined in wired networks. With the rapid advancement of both wireless network technologies and mobile smart phones, there is an increasing need for cloud services to be equally accessible by mobile users, thus rendering a new research field of *mobile cloud computing* (MCC). In this workshop, MCC refers to a vision and its associated enabling technologies that facilitate an infrastructure where both the data storage and the data processing happen outside of the mobile device. Current cloud computing architecture, platforms and services need to evolve, by taking into consideration the specific features of mobile networks that are different from these of fixed IP networks, to better serve cloud applications operating over mobile wireless networks. Apart from investigating into mobile IaaS framework, which provides fundamental, infrastructure-level support to MCC, SaaS (software as a service) is particularly attractive to mobile applications. This is because a SaaS can free resource-constrained mobile devices from having many applications installed and executed on them.

The other side of the mobile cloud story is networking. This can be addressed from two different angles. One angle is how the wireless networks can be engineered to provide better connectivity support to cloud services. On the other hand, there is also the aspect of how wireless networks can take advantage of the advanced features of cloud computing to solve network problems. One particular issue this Workshop emphases on is the modelling of mobile networks, including issues such as subscriber perception analysis and traffic-aware network architecture design for mobile network systems. Mobile Internet has brought many problems – the contradiction of increasing demand for data rate and limited bandwidth of air interface of mobile cellular systems, poor subscriber perception performance or quality of experience (QoE), some Internet apps such as IM/P2P not suitable for transmissions in mobile cellular systems. As a result, mobile Internet traffic analysis, modelling and management and the traffic-aware network architecture design has become a prerequisite for mobile cellular system architecture operation and development for the mobile telecom operators.

Workshop Co-chairs:

Dr. Shumao Ou, Oxford Brookes University, UK
Dr. Xing Zhang, Beijing University of Posts and Telecom (BUPT), China
Zhaobiao Lv, Director of Wireless Lab, China Unicom Research Institute, China
Prof. Kun Yang, University of Essex, UK
Prof. Hai Jin, Huazhong University of Science and Technology, China
Prof. Amiya Nayak, University of Ottawa, Canada

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Chair: Prof. Xing Zhang, (Beijing University of Posts and Telecommunications, China)

9:30 - 12:30

On studying the integration of range-based and range-free localization algorithms in wireless sensor networks

Yufeng Wang (Nanjing University of Posts and Telecommunicaitons, China), Qun Jin (Waseda University, Japan), Jianhua Ma (Hosei University, Japan)

Source coding dissemination protocols for mobile clouds

Roberto Beraldi (Universita` degli Studi di Roma "La Sapienza", Italy), Hussein Alnuweiri (Texas A&M University, Qatar), Khalil Massri (SAPIENZA Università di Roma, Italy)

Context-Aware Decision Engine for Mobile Cloud Offloading

Ting-Yi Lin (National Tsing Hua University, Taiwan), Ting-An Lin (National Tsing Hua University, Taiwan), Chung-Ta King (National Tsing Hua University, Taiwan), Cheng-Hsin Hsu (National Tsing Hua University, Taiwan)

A Network-aware Virtual Machine Placement Algorithm in Mobile Cloud Computing Environment

Decheng Chang (Jilin University, China), Gaochao Xu (Jilin University, China), Kun Yang (University of Essex, UK), Liang Hu (Jilin University, China)

Towards A Client-Side QoS Monitoring and Assessment Using Generalized Pareto Distribution in A Cloud-Based Environment

Ammar Kamel (Western Michigan University, USA), Ala Al-Fuqaha (Western Michigan University, USA), Dionysios Kountanis (Western Michigan University, USA), Issa M Khalil (United Arab Emirates University, UAE)

Analyzing GPRS Mobile Network Traffic with Map Reduce

Chao Dong, Shuo Zhang, Yang Jie, Gang Cheng

3GPP LTE Traffic Offloading onto WiFi Direct

Alexander Pyattaev, Kerstin Johnsson, Sergey Andreev, Yevgeni Koucheryavy