For Posting

CITY UNIVERSITY OF HONG KONG

DEPARTMENT OF ELECTRONIC ENGINEERING & IEEE HK SECTION CAS/COM CHAPTER

Presents a seminar on

When Short-Packet Communication Meets Non-Orthogonal Multiple Access

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Date : 29 March 2019 (Friday)
Time : 10:00am – 11:00 am
Venue : G6302, 6/F, Green Zone, Yeung Kin Man Academic Building, CityU

Abstract

This presentation introduces the use of short-packet communications into non-orthogonal multiple access (NOMA) to achieve low latency in wireless networks. Specifically, the optimisation of transmission rates and power allocation is conducted to maximise the effective throughput of the user with a higher channel gain while guaranteeing the other user achieving a certain level of effective throughput. To demonstrate the benefits of NOMA, the performance of orthogonal multiple access (OMA) is analysed as a benchmark. It is shown that NOMA can significantly outperform OMA by achieving a higher effective throughput with the same latency. Moreover, it is found that the performance gap between NOMA and OMA becomes more prominent when the effective throughput targets at the two users become closer to each other. This demonstrates the benefits of the joint exploration of NOMA and short-packet communications with practical constraints.

Biography

Dr. Nan Yang received his Ph.D. degree from Beijing Institute of Technology in 2011. Since July 2014, he has been with the Research School of Electrical, Energy and Materials Engineering at the Australian National University, Canberra, Australia, where he is currently a Senior Lecturer. He received the IEEE ComSoc Asia-Pacific Outstanding Young Researcher Award in 2014. Also, he is the co-recipient of Best Paper Awards at the IEEE GlobeCOM 2016 and the IEEE VTC Spring 2013. He is currently serving on the editorial board of the IEEE Transactions on Wireless Communications, IEEE Transactions on Vehicular Technology, IEEE Transactions on Molecular, Biological, and Multi-Scale Communications, and Transactions on Emerging Telecommunications Technologies. His research interests include massive multiple-antenna systems, millimetre wave communications, cyber-physical security, ultra-reliable and low-latency communications, and molecular communications.

~~~ All are welcome ~~~

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