Yanbing Liu

✉ liu3098@purdue.edu   📞 +1 7657756490   🌐 yanbingliu1997.github.io

Research Interest: Measurement & Design of Mobile Networking (4G/5G/6G)

Education

Purdue University, West Lafayette, USA   *Aug. 2020 - Present*
Ph.D in Department of Computer Science
Advisor: *Prof. Chunyi Peng*

University of Science and Technology of China (*USTC*), Hefei, P.R.China   *Sep. 2017 - Jun. 2020*
M.E. in Department of Electronic Engineering and Information Science
Advisor: *Prof. Guo Wei*
National Scholarship (***Top 1%***), 2018

University of Science and Technology of China (*USTC*), Hefei, P.R.China   *Sep. 2013 - Jun. 2017*
B.E. in Department of Electronic Engineering and Information Science

Research Experience

5G in the Sky   *Oct. 2022 - present*
○ Perform a drone-based case study to demonstrate the both high potential and high risk of 5G performance in the sky.
○ Confirm the root causes of under-utilized 5G resources in the sky.

5G Experience Measurement   *Apr. 2021 - Jul. 2022*
○ Measure and characterize 5G experience on coverage, availability and performance with three main US operators.
○ Identify performance issues leading to unsatisfactory 5G experience and analyze the root causes.
○ Design a patch solution *5GBoost*, and validate its effectiveness to realize more 5G potentials.

Enhancing Carrier Aggregation Beyond 5G   *Jan. 2022 - Jul. 2022*
○ Prepare motivating examples from real-world 5G datasets to illustrate the sluggish Carrier Aggregation (CA) procedure.
○ Perform trace-driven evaluation to show the benefit of our proposed new design CA++.

LTE Extreme Mobility Management Optimization   *Jul. 2020 - Jan. 2021*
○ Find frequent radio link failures of LTE cells under extreme mobility (>300km/h).
○ Propose a device-side solution to forecast link failure and perform pre-emptive cell switch actions to reduce suspension.

Publications

○ Qianru Li, Zhehui Zhang, **Yanbing Liu**, Zhaowei Tan, Chunyi Peng and Songwu Lu, "CA++: Enhancing Carrier Aggregation Beyond 5G," accepted by *The 29th International Conference on Mobile Computing and Networking* (*MobiCom '23*), Oct 2023.

○ **Yanbing Liu** and Chunyi Peng, "A Close Look at 5G in the Wild: Unrealized Potentials and Implications," accepted by *IEEE International Conference on Computer Communications* (*INFOCOM '23*), May 2023.

○ **Yanbing Liu**, Xiaowei Qin, Ting Zhu, Xiaohui Chen and Guo Wei, "Improve MPTCP with SDN: From the perspective of resource pooling," *Journal of Network and Computer Applications*, vol. 141, pp. 73-85, Sep 2019.

○ **Yanbing Liu**, Xiaowei Qin, Tianyi Zhang, Ting Zhu, Xiaohui Chen and Guo Wei, "Decoupled TCP Extension for VLC Hybrid Network," *IEEE/OSA Journal of Optical Communications and Networking*, vol. 10, no. 5, pp. 563-572, May 2018.

○ **Yanbing Liu**, Xiaowei Qin, Ting Zhu, Xiaohui Chen and Guo Wei, "BESS: BDP Estimation Based Slow Start Algorithm for MPTCP in mmWave-LTE Networks," *2018 IEEE 88th Vehicular Technology Conference* (*VTC Fall*), 2018.