

# Yanbing Liu

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## Research Interest

My current research interests are in the area of mobile networking, with a focus on 5G/6G networks measurement and design.

## 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

## Professional Experience

Purdue University, West Lafayette, USA Aug. 2021 - Present

**Research Assistant**

AT&T Labs, Bedminster, USA

May. 2023 - Present

**Research Intern**

## 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.