

JIYAO HU

Tel: (+1) 919-808-8790 Email: jyhu@cs.duke.edu

LSRC Building D305, 308 Research Drive, Durham, NC 27708-0129

EDUCATION

Ph.D., Department of Computer Science, Duke University

2017.09 – present

- Advised by [Prof. Xiaowei Yang](#)
- Research Interests: Networking Measurement, Networking Diagnosis
- Selected Courses: Design/Analysis Algorithms, Computer Networks, Consensus Protocols, Probabilistic ML
- Teaching Assistant: Computer Network Architecture, Computer Networks/Distributed Systems

B.S., School of Computer Science, Fudan University (Major: Information Security)

2013.09 – 2017.06

- Cumulative GPA: 3.28/4.0 (Ranking: 3/32)
- Major GPA: 3.63/4.0

RESEARCH EXPERIENCE

Improving the Reliability of Cable Broadband Networks (Advisor: [Dr. Xiaowei Yang](#))

Mar 2018 - present

- Analyzed the correlation between Proactive Network Maintenance (PNM) metrics collected from customers' cable modems and customer trouble tickets, showing they are highly correlated.
- Built a networking fault detection system without manually labeling. Instead, we used customer trouble tickets as hints to train our classification.
- Generated time series features from periodically collected PNM metrics to improve the performance of our system and to reduce noise from both PNM metrics and tickets.
- Achieved a high precision and a moderate recall on cable networks.

Towards Efficient Visual Crowdsourcing for Indoor Mapping (Advisor: [Dr. Yu Xiao](#))

Jan 2017 – May 2017

- Developed a system that build 3D indoor models from photos using Structure from Motion (SfM) algorithm.
- Enhanced the accuracy of models by labels in photos by Crowdsourcing. For the objects that cannot be captured by photos such as windows or glass doors, asking users to manually labeled their edges. Our system rebuild the 3D objects based on this information.

Measurement and Analysis of the Swarm Social Network (Advisor: [Dr. Yang Chen](#))

Nov 2014 - Aug 2016

- Developed a distributed crawler and crawled the complete social graph and all user profiles of the Swarm app
- Used several classic graph metrics to characterize how people in Swarm connect with each other
- Did detailed statistics on the relationship between social connectivity and check-in activities
- Used social-based and demographic-based features trained by some machine learning models to accurately predict the activities in conducting check-ins

PUBLICATIONS

CableMon: Improving the Reliability of Cable Broadband Networks via Proactive Network Maintenance

- ✧ Accepted by 17th USENIX Symposium on Networked Systems Design and Implementation (NSDI 2020)
- ✧ Authors: **Jiyao Hu**, Zhenyu Zhou, Xiaowei Yang, Jacob Malone, Jonathan W Williams

Understanding Cross-site Linking in Online Social Networks

- ✧ ACM Transactions on the Web (TWEB), 2018, 12(4):25:1-25:29.
- ✧ Authors: Qingyuan Gong, Yang Chen, **Jiyao Hu**, Qiang Cao, Pan Hui, Xin Wang

SnapTask: Towards Efficient Visual Crowdsourcing for Indoor Mapping

- ✧ Proc. of the 38th IEEE International Conference on Distributed Computing Systems (ICDCS'18), Vienna, Austria, Jun 2018
- ✧ Authors: Marius Noreikis, Yu Xiao, **Jiyao Hu**, Yang Chen

Measurement and Analysis of the Swarm Social Network with Tens of Millions of Nodes

- ✧ IEEE Access, 2018, 6:4547-4559
- ✧ Authors: Yang Chen, **Jiyao Hu**, Hao Zhao, Yu Xiao, Pan Hui

Building and Analyzing a Global Co-Authorship Network Using Google Scholar Data

✧ Proc. of 26th International World Wide Web Conference (WWW 2017) Companion, 4th WWW Workshop on Big Scholarly Data (BigScholar 2017), Perth, Australia, Apr. 2017

✧ Authors: Yang Chen, Cong Ding, **Jiyao Hu**, Ruichuan Chen, Pan Hui, Xiaoming Fu

Measurement and Analysis of Tips in Foursquare

✧ Proc. of the 14th IEEE International Conference on Pervasive Computing and Communications (PerCom'16), Work-in-Progress (WiP) session, Sydney, Australia, Mar. 2016

✧ Authors: Yang Chen, Yuxi Yang, **Jiyao Hu**, Chenfan Zhuang

INTERNSHIP EXPERIENCE

Visiting Student, Tsinghua University

Jul 2016 - Aug 2016

- Worked together with Dr. Yong Li at Tsinghua University
- Used Hadoop Platform for processing a large set of 3G/LTE mobile data traffic which contains one-month data from 9,000 base stations with 0.15 million subscribers in Shanghai
- Extracted subscribers' GPS records from our large data set
- Analyzed the source application which tends to leakage user privacy

Software Engineer, Lean Intelligence

May 2015 - Dec 2015

- Developed a series of distributed web crawlers to fetch data from more than 40 online shopping websites
- Implemented a filter to extract useful information from the raw data
- Developed a back-end system to write data to the database and search information from the database
- Developed a transmission system to send data from remote servers to local system automatically

AWARDS / HONORS

- The Second Prize of Scholarship at Fudan University *2015 – 2016*
- Tung OOCL Scholarship at Fudan University (the First Prize, TOP 5%) *2014 – 2015*
- The Third Prize of Scholarship at Fudan University *2013 – 2014*