JONNY (ZHAONING) KONG

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RESEARCH INTEREST

Networked & Mobile Systems, Systems for Machine Learning, Edge-assisted AR/VR, 5G.

EDUCATION

Purdue University — West Lafayette, IN, U.S.
Ph.D. in Computer Engineering — Aug 2020 - Present

University of California, Los Angeles — Los Angeles, CA, U.S.
M.S. in Computer Science — Sep 2018 - June 2020

Beihang University — Beijing, China
B.E. in Automation — Sep 2014 - June 2018

PROFESSIONAL AND RESEARCH EXPERIENCE

Purdue University — West Lafayette, IN, U.S.
Research Assistant — Aug 2020 - Present
Advisor: Prof. Y. Charlie Hu

- Designed machine-learning-as-a-service (MLaaS) frameworks that maximizes the capacity of a GPU server in serving edge-assisted AR mobile apps
- Designed MLaaS frameworks that optimizes the overall accuracy of an AR mobile app that offloads multiple tasks to an edge GPU server [1]
- Profiled and analyzed the performance of next-generation wireless networks, e.g. 5G mmWave [5] and 802.11ad [3]
- Analyzed and designed systems for next-generation mobile apps via edge computing [7] [6], and analyzed their performance on 5G networks [2]

University of California, Los Angeles — Los Angeles, CA, U.S.
Research Assistant — Oct 2018 - Jun 2020
Advisor: Prof. Lixia Zhang

- Performed extensive experiments and designed the protocols for data synchronization [4] [9], a transport-layer protocol for Named Data Networking (NDN)

NetEase Inc. — Beijing, China
Software Engineering Intern — Mar 2018 - Jun 2018

- Used NLP models to suggest related short phrases at each page footer in the NetEase News app, which leads users to click on and jump to the search page

PUBLICATIONS

Conference Papers

[1] **Jonny Kong***, Qiang Xu*, Jiayi Meng, Y. Charlie Hu. *"AccuMO: Accuracy-Centric Multitask Offloading in Edge-Assisted Mobile Augmented Reality"*. In **ACM MobiCom 2023**. (*co-primary)

[2] Moinak Ghoshal, Pranab Dash, **Jonny Kong**, Qiang Xu, Y. Charlie Hu, Dimitrios Koutsonikolas, Yuanjie Li. *"Can 5G mmWave Support Multi-User AR Apps?"*. In **PAM 2022**. [pdf]

[3] Shivang Aggarwal, **Jonny Kong**, Moinak Ghoshal, Y. Charlie Hu, Dimitrios Koutsonikolas. *"Throughput Prediction on 60 GHz Mobile Devices for High-Bandwidth, Latency-Sensitive Applications"*. In **PAM 2021 (Best Dataset Award)**. [pdf]

[4] Tianxiang Li, **Jonny Kong**, Spyridon Mastorakis, Lixia Zhang. *"Distributed Dataset Synchronization in Disruptive Networks"*. In **IEEE MASS 2019**. [pdf]

Workshop Papers & Posters

[5] Moinak Ghoshal*, **Jonny Kong***, Qiang Xu*, Zixiao Lu, Shivang Aggarwal, Imran Khan, Yuanjie Li, Y. Charlie Hu, and Dimitrios Koutsonikolas. *"An In-Depth Study of Uplink Performance of 5G mmWave Networks"*. In **ACM SIGCOMM 5G-MeMU Workshop '22**. (* co-primary) [pdf]

[6] Jiayi Meng, **Jonny Kong**, Y. Charlie Hu, Mun Gi Choi, Dhananjay Lal. *"Do We Need Sophisticated System Design for Edge-assisted Augmented Reality?"*. In **ACM EdgeSys 2022 (Best Paper Award)**. [pdf]

[7] Jiayi Meng*, **Jonny Kong***, Qiang Xu, Y. Charlie Hu. *"Do Larger (More Accurate) Deep Neural Network Models Help in Edge-assisted Augmented Reality?"*. In **ACM SIGCOMM NAI Workshop '21**. (*co-primary) [pdf]

[8] Lana Ramjit, **Jonny Kong**, Ravi Netravali, Eugene Wu. *"Physical Visualization Design (demo)"*. In **ACM SIGMOD 2020**. [pdf]

[9] Tianxiang Li, **Jonny Kong**, Lixia Zhang. *"Supporting Delay Tolerant Networking: A Comparative Study of Epidemic Routing and NDN"*. In **IEEE ICC '20 ICN-SRA workshop**. [pdf]

SELECTED HONORS AND AWARDS

Research Awards

- Best Paper Award, EdgeSys '22
- Best Dataset Award, PAM '21

Student Awards

- National Scholarship of China, 2017 (Top 0.2% nationwide)
- Annual Outstanding Student, Beihang Univ., 2017 (Top 5%)

TALKS AND PRESENTATIONS

- **GitSync: Distributed Git over Named Data Networking (NDN)**: NDN Community Meeting 2019
- **Edge-assisted AR**: SIGCOMM NAI '21

PROFESSIONAL SKILLS

Python, C++, Java, PyTorch, Android, CUDA, Docker

TEACHING ASSISTANT

ECE 26400 Advanced C Programming, Fall '20, Spring '21, Summer '21, Purdue University
CS 151B Computer Systems Architecture, Winter '20, UCLA
CS 217A Internet Architecture and Protocols, Fall '19, UCLA