Z. JONNY KONG

+1(310) 498-9627 ⋄ kong102@purdue.edu ⋄ www.jonnykong.com

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 Electrical and 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

RESEARCH AND PROFESSIONAL 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 [2]
- Profiled and analyzed the performance of next-generation wireless networks, e.g. 5G mmWave [1] [7] and 802.11ad [5]
- Analyzed and designed systems for next-generation mobile apps via edge computing [9] [8], and analyzed their performance on 5G networks [3] [4]

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 [6] [11], 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] Moinak Ghoshal*, Imran Khan*, **Jonny Kong***, Phuc Dinh, Jiayi Meng, Y. Charlie Hu, Dimitrios Koutsonikolas. *"Performance of Cellular Networks on the Wheels"*. In **ACM IMC 2023**. (* co-primary)

[2] **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)

[3] Moinak Ghoshal*, **Jonny Kong***, Qiang Xu*, Zixiao Lu, Shivang Aggarwal, Imran Khan, Jiayi Meng, Yuanjie Li, Y. Charlie Hu, Dimitrios Koutsonikolas. *Can 5G mmWave Enable Edge-Assisted Real-Time Object Detection for Augmented Reality?*. In **IEEE MASCOTS 2023**. (*co-primary)

[4] 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]

[5] 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]

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

Workshop Papers & Posters

[7] 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]

[8] 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]

[9] 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]

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

[11] 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)

PROFESSIONAL SERVICES

Journal Reviewers: IEEE Network, Computer Communications
Artifact Evaluation Committee (AEC): ACM MobiSys 2023, SOSP 2023

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