

Po-han Li

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EDUCATION

The University of Texas at Austin

Texas, U.S.A.

Ph.D. in Electrical and Computer Engineering

Aug. 2021 – Present

- Decision, Information, and Communications Engineering (DICE) track

National Taiwan University

Taipei, Taiwan

B.S. in Electrical Engineering

Sep. 2016 – Jul. 2020

- GPA: overall: 4.26/4.30 (3.99/4.0), last 60: 4.29/4.30, ranking: 4/177
- Honors: Dean's List*3

EXPERIENCE

Graduate Research Assistant

Aug. 2021 – Present

Swarm Lab and Autonomous Systems Group

Texas, U.S.A

- Co-advised by Dr. Sandeep Chinchali and Dr. Ufuk Topcu.
- Research Interest: Network control and optimization.

Research Fellow

Aug. 2020 – Jul. 2021

Center for IoT Innovation at National Taiwan University of Science and Technology

Taipei, Taiwan

- Achieved a 20% throughput improvement in KIVA project, a simulation platform for Automated Guided Vehicles (AGV) in a large-scale logistics warehousing center.
- Participate in the Pandemic Disease project, an agent-based simulation platform for disease spreading in different circumstances inspired by COVID-19.

Machine Learning and Data Scientist Intern

Oct. 2019 – Mar. 2021

China Network Systems Co., Ltd.

Taipei, Taiwan

- Established a Database collecting network traffic and QoS data for an automatic alerting system in core network traffic.
- Created data visualization graphics, and translated complex data sets into comprehensive visual representations.
- Collaborated with senior personnel to define and meet data modeling standards for Churn Rate Prediction project.
- Used white box (raspberry pi) distributed in the core net and network terminal to collect network condition data.

Research Assistant

Aug. 2019 – Jun. 2020

Prof. Wanjiun Liao's Internet Research Lab, NTU

Taipei, Taiwan

- Participated in *5G mobile edge computing technology research and platform construction* project supported by Ministry Of Science And Technology.
- Enhanced the quality of service of Multi-view 3D Videos by Reinforcement Learning in unpublished work, *Intelligent Caching for Multi-view 3D Videos in 5G Networks*.

Research Assistant

Apr. 2017 – Jun. 2018

Prof. Jiun-Lang Huang, NTU

Taipei, Taiwan

- Participated in *Information security technology research and development plan for smart life and emerging applications* project supported by Ministry Of Science And Technology.
- Research the latest Blockchain technology from Ethereum and Smart Contract.
- Simulated code for network topology under the condition of certain distribution of node degrees.

PUBLICATIONS

1. Po-han Li, Ufuk Topcu, and Sandeep P Chinchali. Adversarial examples for model-based control: A sensitivity analysis. *arXiv preprint arXiv:2207.06982*, 2022
2. Yuchong Geng, Dongyue Zhang, Po-han Li, Oguzhan Akcin, Ao Tang, and Sandeep P Chinchali. Decentralized sharing and valuation of fleet robotic data. In *Conference on Robot Learning*, pages 1795–1800. PMLR, 2022

PROJECTS

- Intelligent Caching for Multi-view 3D Videos in 5G Networks** | *PyTorch, Python* | [Link](#) Aug. 2019–Jun. 2020
- Considered MEC server in the construction of multi-view 3D videos caching policy.
 - Achieved a 25% reduction of the system combination cost of latency and vague due to view synthesis.
- Performance Analysis of Dual Connectivity** | *Python* | [Link](#) Feb. 2018 – Jun. 2019
- Created a greedy algorithm to match mobile devices to base stations while maximizing total throughput in a two-tier wireless heterogeneous network.
 - Achieved a 118 times run time improvement faster than the optimal Hungarian algorithm while total throughput and Jain's fairness index decreased less than 2% compared to optimal algorithm with times of handovers remaining the same.
- Mycobacterium tuberculosis Drug Resistance Prediction Model** | *PyTorch, Python* | [Link](#) Feb.2018–Jun.2019
- Constructed a drug resistance prediction model using deep neural network
 - Achieved a 11% improvement of sensitivity compared to a state-of-the-art model.
- An NP-complete Routing Algorithm Based on SSSP Algorithm** | *C++* Sep. 2018 – Jan. 2019
- Solved a multiple source routing problem with weight-balancing single-source shortest path algorithm.
- AI Face Recognition System in House Alerting** | *OpenCV, Python* Feb. 2018 – Jun. 2019
- Used congestion control to balance traffic toward a centralized computing server in a stranger detection system.

TECHNICAL SKILLS

Languages: Chinese, English, Japanese

Programming Languages: Python, C/C++, SQL, Shell Scripting

Libraries&Toolkits: PyTorch, Keras, pandas, NumPy, Matplotlib, Git, Linux, L^AT_EX

Data Visualization Tools: Tableau, Power BI