

Yuan-Yao (Mike) Lou

✉ yylou@purdue.edu

🌐 yylou.github.io

in [linkedin.com/in/yylou](https://www.linkedin.com/in/yylou)

🐙 github.com/yylou

PROFESSIONAL SUMMARY

Current Ph.D. student at Purdue University, focusing on **containerized (Kubernetes-based) architecture design of open edge platform in 5G/6G networks** and experienced in **microservice-based system automation** in on-premise server and **web application development on AWS**.

RESEARCH INTEREST

Edge Computing Wireless Networks and Systems (5G/6G) Internet of Things (IoT) Software-Defined Network (SDN) Network Function Virtualization (NFV) Service Function Chaining (SFC) Deep Learning Reinforcement Learning

EDUCATION

Purdue University

Ph.D. student in Electrical and Computer Engineering | GPA: 4.0 / 4.0

📍 West Lafayette, IN

Aug. 2021 – May 2026 (Expected)

- Advisor: Prof. Mung Chiang and Prof. Kwang Taik Kim
- Coursework: Computer Network Systems, Deep Learning, Theory of Linear Model

National Taiwan University

M.S. in Computer Science | GPA: 3.8 / 4.0

📍 Taipei, Taiwan

Sep. 2015 – Jun. 2017

- Advisor: Prof. Ai-Chun Pang
- Thesis: Fog-based Virtualization for Low-Latency Wearable Services

National Chiao Tung University

B.S. in Computer Science | GPA: 3.8 / 4.0

📍 Hsinchu, Taiwan

Sep. 2011 – Jun. 2015

PUBLICATIONS

Journal Papers

- X.-L. Wang, M.-J. Sheng, **Y.-Y. Lou**, and M. Chiang, "Internet of Things Session Management Over LTE — Balancing Signal Load, Power, and Delay," in **IEEE Internet of Things Journal**, vol. 3, no. 3, pp. 339-353, June 2016 [\[Paper\]](#)

Conference Papers

- S. B. Weinstein, **Y.-Y. Lou**, and T. R. Hsing, "Intelligent Network Edge with Distributed SDN for the Future 6G Network," in **IEEE COMCAS**, 2021 [\[Paper\]](#)
- H.-P. Lin, Y.-Y. Shih, A.-C. Pang, and **Y.-Y. Lou**, "A Virtual Local-hub Solution with Function Module Sharing for Wearable Devices," in **ACM MSWiM**, 2016 [\[Paper\]](#)

Book Chapter

- Y.-Y. Shih, A.-C. Pang, and **Y.-Y. Lou**, "Chapter 13 - Development of Wearable Services with Edge Devices," in **Fog and Fotonomics**, Wiley Telecom, 2020 [\[Paper\]](#)

RESEARCH EXPERIENCE

Purdue University

Graduate Research Assistant

📍 West Lafayette, IN

Aug. 2021 – Present

- Researched on open edge platform with SDN and NFV about open interfaces to enable architecture disaggregation
- Explored joint optimization of 5G RAN (PHY/MAC) performance with open edge architecture through data analytic
- Studied Service Function Chaining across microservice-based network functions to improve network programmability

Independent Researcher

📍 Remote

Collaborator: Prof. Stephen B. Weinstein and Prof. T. Russell Hsing

Dec. 2020 – Aug. 2021

- Investigated distributed SDN coupled with edge computing and data storage to support vehicular networks
- Served as speaker in Edge and Fog Computing track on IEEE 7th World Forum on Internet of Things [\[Link\]](#)

Ministry of Science and Technology

📍 Taipei, Taiwan

Graduate Researcher

Sep. 2015 – Sep. 2017

- Proposed concept Virtual Local-hub to enable microservice-based computation offloading by modifying Android Wear OS
- Built network system with load balancer and developed system metric dashboard for performance monitoring (Django)
- Reduced execution time of wearable services by 60% and lowered down wearable devices CPU usage by 70%

Princeton University – EDGE Lab

📍 Princeton, NJ

Research Intern | Mentor: Prof. Mung Chiang and Dr. Ming-Jye Sheng

Jul. 2014 – Mar. 2015

- Built Markov chain model and formulated IoT session management factors (power consumption, delay, signal load) (Prism)
- Automated probabilistic model simulation with adaptive DRX algorithms and visualized numerical results (Python)
- Improved power saving by 50% and signal saving by 60% for packets with 0.1 s delay compared with 2 benchmarks

INDUSTRIAL EXPERIENCE

IoT Eye Inc.

📍 Remote

Full-stack Cloud Developer (Contractor)

Apr. 2021 – Aug. 2021

- Deployed OAM model based on Frappe frameworks on AWS EC2 to manage routing resources across 5 agencies
- Developed DevOps toolkit to automate deployment / system management / API testing to improve product scalability
- Lectured tutorials on Frappe framework through code review on different features of OAM system model

Silicon Motion (SIMO) – Algorithm and Technology R&D Center

📍 Taipei, Taiwan / Milpitas, CA

Software Engineer (Supervisor)

Jul. 2020 – Apr. 2021

- Devised microservice-based system in on-premise server to automate design flows and boost development efficiency by 2x
- Cooperated with Human Resources as technical campus recruiter to promote on-campus brand awareness
- Established programming disciplines (Python) and organized training sessions for new employees

Software Engineer (Senior)

Dec. 2017 – Jun. 2020

- Built design-tracking system by graph algorithms with visualized profiling metrics to enhance design review efficiency (1.5x)
- Acted as primary external contact person to collaborate with international companies for researching new solutions
- **Promoted twice within 24 months** for outstanding performance on software development and solution finding

TEACHING EXPERIENCE

National Taiwan University

📍 Taipei, Taiwan

Courses: CSIE 3510 Computer Network, CSIE 5057 Advanced Computer Network

Feb. 2016 – Jan. 2017

- Lectured TCP/IP protocol (802.11, 802.3) and demonstrated network packet monitoring and analysis in Wireshark
- Designed IRC chatbot application as project assignment to educate students about socket programming (Python, C)
- Enhanced program robustness by peer-testing system and stimulated creativity by flexible score criterion

SKILLS

Languages

Python Java C++ HTML / CSS Javascript MATLAB / Octave CUDA

Tools

Django Flask / Eve Frappe / MariaDB MongoDB PyTorch TensorFlow Scikit-learn Git

Platforms

Linux AWS EC2 / S3 / DynamoDB / API Gateway / Lambda Google App Engine Android

HONORS & AWARDS

Valedictorian of CS Department Graduation Ceremony | National Taiwan University

2017

Outstanding Teaching Assistant Awards | National Taiwan University

2016 & 2017

Presidential Awards | National Chiao Tung University

2014 & 2015