

# Liangcheng (LC) Yu

Microsoft Building 99  
14820 NE 36th Street  
Redmond, WA 98052

✉ [liangchengyu@microsoft.com](mailto:liangchengyu@microsoft.com)

🌐 [liangchengyu.com](https://liangchengyu.com)

🔗 [liangcheng-yu](https://github.com/liangcheng-yu)

## RESEARCH INTEREST

I am a senior researcher at Microsoft Research Redmond (previously Office of the CTO, Azure for Operators). I did my Ph.D. in the Department of Computer and Information Science at the University of Pennsylvania advised by Prof. Vincent Liu. My interests are broadly in systems and networking. I am drawn to the tangible, interdisciplinary nature of the domain, encompassing distributed systems, programming languages, computer architecture, machine learning, and control theory. I am excited about minimizing waste in networked systems by (1) developing high-efficiency designs that tightly couple software with emerging hardware for applications; and (2) exploring innovative zero-waste practices for any residual waste.

## EDUCATION

### University of Pennsylvania

*Ph.D., Computer Science*

Thesis: Toward Zero-waste Terabit Networked Systems

**Philadelphia, USA**

*Aug. 2019 - Aug. 2024*

### KTH Royal Institute of Technology

*M.Sc., Electrical Engineering*

Program: Information and Network Engineering/Wireless Systems, GPA: 5.0/5.0  
KTH-ZJU 3+2 joint program (1st year concurrent with 4th year of bachelor)

**Stockholm, Sweden**

*Aug. 2016 - Apr. 2019*

### ETH Zürich

*Master Thesis, Computer Science*

**Zürich, Switzerland**

*Feb. 2018 - Sep. 2018*

### Zhejiang University

*B.Eng., Automation*

**Hangzhou, China**

*Sep. 2013 - June 2017*

## PUBLICATION

- [P1] (NSDI 2025) Yinda Zhang, **Liangcheng Yu**, Gianni Antichi, Ran Ben Basat, and Vincent Liu  
*Enabling Silent Telemetry Data Transmission with InvisiFlow*  
Proceedings of the USENIX Symposium on Networked Systems Design and Implementation, Philadelphia, PA, April 2025
- [P2] (OSDI 2024) **Liangcheng Yu**, Xiao Zhang, Haoran Zhang, John Sonchack, Dan R. K. Ports, and Vincent Liu  
*Beaver: Practical Partial Snapshots for Distributed Cloud Services*  
USENIX Symposium on Operating Systems Design and Implementation, Santa Clara, CA, July 2024
- [P3] (SIGCOMM 2023) Xinyi Chen, **Liangcheng Yu**, Vincent Liu, and Qizhen Zhang  
*Cowbird: Freeing CPUs to Compute by Offloading the Disaggregation of Memory*  
Proceedings of the ACM SIGCOMM Conference, New York, USA, September 2023
- [P4] (SIGCOMM 2022) **Liangcheng Yu**, John Sonchack, and Vincent Liu

*Cebinae: Scalable In-network Fairness Augmentation*

Proceedings of the ACM SIGCOMM Conference, Amsterdam, Netherlands, August 2022

[P5] (SIGCOMM 2022) Yiran Lei, **Liangcheng Yu**, Vincent Liu, and Mingwei Xu  
*PrintQueue: Performance Diagnosis via Queue Measurement in the Data Plane*  
Proceedings of the ACM SIGCOMM Conference, Amsterdam, Netherlands, August 2022

[P6] (NSDI 2022) **Liangcheng Yu**, John Sonchack, and Vincent Liu  
*OrbWeaver: Using IDLE Cycles in Programmable Networks for Opportunistic Coordination*  
Proceedings of the USENIX Symposium on Networked Systems Design and Implementation, Renton, WA, April 2022

[P7] (SIGCOMM 2020) **Liangcheng Yu**, John Sonchack, Vincent Liu  
*Mantis: Reactive Programmable Switches*  
Proceedings of the ACM SIGCOMM Conference, New York, USA, Virtual Event, August 2020

[P8] (ToN 2020) Xiuzhen Guo, Yuan He, Xiaolong Zheng, **Liangcheng Yu**, Omprakash Gnawali  
*ZigFi: Harnessing Channel State Information for Cross-Technology Communication*  
IEEE/ACM Transactions on Networking, vol. 28, no. 1, pp. 301-311, February 2020

## PROFESSIONAL SERVICES

**Technical Program Committee:** ASPLOS 2026, APNet 2025, SOSP 2024 Poster Session

**Artifact Evaluation Committee:** SIGCOMM 2024, MobiCom 2024, FAST 2024, SIGCOMM 2023, SOSP 2023, CoNEXT 2023, CAV 2023, SIGCOMM 2022, CoNEXT 2022, OSDI 2022, ATC 2022, EuroSys 2021

**Publication Chair:** HotNets 2024

**Pre-Review Task Force:** NSDI 2025

**Shadow TPC Member:** IMC 2022, EuroSys 2021

**Reviewer:** IEEE/ACM Transactions on Networking 2023 & 2022 & 2020, IEEE Wireless Communications Magazine 2020

## WORK EXPERIENCE

**Microsoft Corporation**

*Senior Researcher*

**Redmond, WA**

*June 2024 - Present*

Worked in the Intelligent Networked Systems group (led by Victor Bahl) at Microsoft Research Redmond.

During Ph.D.....

**Microsoft Corporation**

*Researcher Intern*

**Redmond, Seattle**

*May 2023 - Aug. 2023*

Worked in the Networking Research Group at Microsoft Research on cloud-hosted financial exchanges.

**Google LLC**

*Student Researcher*

**Sunnyvale, California (Remote)**

*Sep. 2022 - April 2023*

*Student Researcher*

*Aug. 2021 - April 2022*

*Software Engineering Intern*

*May 2021 - Aug. 2021*

Exploited in-network signals for host networking stack at the congestion control team of NetInfra.

**Microsoft Corporation**

*Researcher Intern*

**Redmond, Seattle (Remote)**

*May 2022 - Aug. 2022*

Worked on the network benchmarks for FPGA SmartNICs at the Azure hardware architecture group.

Prior Ph.D. ....

**Berkeley NetSys Lab, UC Berkeley** **Berkeley, California**  
*Visiting Student Researcher* *Sep. 2018 - Mar. 2019*

Mimicked heuristic-based packet scheduling algorithms with a Deep Reinforcement Learning abstraction.

**Swedish Institute of Computer Science (RISE SICS)** **Kista, Stockholm**  
*Research Intern* *Oct. 2017 - Feb. 2018*

Merged EST-CoAPs stack on Contiki OS clients and REST CA Server for LwM2M certificate bootstrap in Internet-of-Things (IoT) networks.

**Ericsson** **Kista, Stockholm**  
*Software Developer Intern* *Aug. 2017 - Jan. 2018*

Worked on the development of automated test using JCAT for the verification of 4G/5G Radio Access Network (RAN) product.

**Tsinghua University** **Beijing, China**  
*Research Intern* *June 2017 - Aug. 2017*

Applied SVM to decode Channel State Information (CSI) sequence bits for Zigbee to WiFi cross-technology communication with a receiver-initiated mechanism for heterogeneous wireless networks.

**Communication Theory Department, KTH** **Stockholm, Sweden**  
*Student Research Assistant* *Dec. 2016 - May 2017*

Implemented HMM variants with EM and Viterbi algorithms in MATLAB to disaggregate household meter power consumption in smart grid network non-intrusively (NILM).

## TALKS

**Beaver: Practical Partial Snapshots for Distributed Cloud Services**  
USENIX OSDI 2024, Santa Clara, CA, USA, July 2024 ([talk video](#), [slides](#))

**Unleash the Hidden Potential: Harnessing Underutilization in Terabit Networked Systems**  
University of College London, Virtual, Feb. 2024  
Office of the CTO team, Azure for Operators (AFO) Research, Microsoft, Virtual, Jan. 2024

**Fairtopia: A Democratized Cloud-hosted Financial Exchange Platform — Pushing Fairness To Extreme via Communication and Computation Synchrony**  
Networking Research Group, Microsoft Research Redmond, Aug. 2023 ([slides](#))

**Automatic In-network Control Empowered by Programmable Infrastructure**  
Networking Research Group, Microsoft Research Redmond, Virtual, Oct. 2022 ([slides](#))  
Azure for Operators (AFO) Research, Microsoft Research Redmond, Virtual, Sep. 2022 ([slides](#))  
Distributed Systems Laboratory, University of Pennsylvania, Philadelphia, PA, Sep. 2022 ([slides](#))

**Cebinae: Scalable In-network Fairness Augmentation**  
ACM SIGCOMM 2022, Amsterdam, Netherlands, Aug. 2022 ([slides](#))

**OrbWeaver: Using IDLE Cycles in Programmable Networks for Opportunistic Coordination**  
Harvard Systems + Theory group, Harvard University, Virtual, Aug. 2022 ([slides](#))  
USENIX NSDI 2022, Renton, WA, Apr. 2022 ([talk video](#), [slides](#))  
Distributed Systems Laboratory, University of Pennsylvania, Virtual, Mar. 2022

**Mantis: Reactive Programmable Switches**  
ACM SIGCOMM 2020, Virtual, Aug. 2020 ([talk video](#), [slides](#))

Distributed Systems Laboratory, University of Pennsylvania, Virtual, Mar. 2020

## TEACHING ASSISTANT

CIS 553 Networked Systems, Vincent Liu (Spring 2020), University of Pennsylvania

CIT 595 Operating Systems, Boon Thau Loo (Summer 2020 MCIT Coursera Online), University of Pennsylvania

CIS 551 Computer and Network Security, Sebastian Angel (Fall 2020), University of Pennsylvania

## AWARDS

Morris and Dorothy Rubinoff Award (Best Computer Science Ph.D. thesis at Penn), 2024

Penn Presidential PhD Fellow ( $\approx$  38k USD stipend and 10k USD equipment fund annually), 2021-2024

HotNets 2022 Travel Grants, 2022

NSDI 2021 Student Grant, 2021

Ph.D. Fellowship, University of Pennsylvania, 2019-2020

Google Summer of Code 2019 student with Network Simulator 3 (NS-3), 2019

Master thesis grant ( $\approx$  11k CHF stipend), Zeno Karl Schindler Foundation, Geneva, Switzerland, 2018

ETH Zürich Swiss-European Mobility Program (SEMP) scholarship, 2018

Honorable mention, IEEE ComSoc student competition, 2017

KTH student ambassador for Information and Network Engineering, 2017

KTH one-year scholarship for academic excellence, 2017-2018

Honorable mention at the Mathematical Contest in Modeling (MCM), 2016

Outstanding student leader award of Zhejiang University, 2014

Scholarship for outstanding merits at Zhejiang University, 2014

## MISC

**Programming** C/C++, Python, P4, Verilog, JAVA, MATLAB

**Tools/Skills** Network Simulator 3 (NS-3), programmable switch, SmartNIC, FPGA, ONIE, OpenBMC, Vivado, sysadmin, USRP Software-defined Radio, Tensorflow, DPDK

**Languages** English (Proficient), Chinese (Native), German (Elementary), French (Elementary)

**Hobbies** Piano, badminton, classical music, travelling, active MOOC learner

**Extracurricular Activities** I was actively involved in cultural and volunteer activities, sharing time with people from diverse backgrounds. I served as a KTH student ambassador helping out the new international students and answering their queries during 2017-2018. I served as co-president for the ZJU chapter of FACES (Forum for American/Chinese Exchange at Stanford), a Sino-US cultural student organization, during 2015-2016. I was a junior member in ShARE (Share Analysis on Regional Economies) during 2013-2014 and attended the world seminar held at Porto, Portugal. I minored in the Undergraduate Public Administration of Chu Kochen Honors College at ZJU during 2015-2016. I also spent time at various organizations such as ZJU Entrepreneur Magazine as an editor during 2013-2014, student union during 2013-2015 and so forth.

## REFERENCES

Available upon request.