

Jiayi Jane Chen

Department of Computer Science, The University of Texas at Austin

✉ janechen@cs.utexas.edu | 🌐 janecjy.github.io | [in](#) Jiayi Jane Chen | [🔗](#) Janecjy

Research Interests

I develop system abstractions, frameworks, and generalizable AI components grounded in theoretical analysis to build efficient, adaptive, and reliable systems that approximate optimal performance.

Education

The University of Texas at Austin

Ph.D. Candidate in Computer Science

Advisors: Aditya Akella and Sanjay Shakkottai

Austin, TX

Aug. 2021–May 2027 (expected)

Shanghai Jiao Tong University

B.S. in Electrical and Computer Engineering

Shanghai, China

Sept. 2016–Aug. 2020

Work Experience

Microsoft Research

Research Intern, Networking Research Group

Designed a framework for modular network foundation models.

Redmond, WA

June–Aug. 2025

Google

Student Researcher, GCP Systems Infrastructure / Cloud NetInfra

Integrated all-to-all collective communication into the Pony transport layer and developed an RPC counterpart. Integrated ASTRA-sim into Google's internal OMNeT++-based network simulator.

San Jose, CA

June 2023–Feb. 2024

Intel

Research Intern, Switch and Fabric Group

Designed Protective Load Balancing and weighted packet-spraying algorithm using in-band network telemetry (INT).

San Jose, CA

May 2022–Feb. 2023

Intel

Research Intern, Analytics Storage Group

Enabled columnar processing in Spark SQL operators using Apache Arrow.

Shanghai, China

Jan.–Aug. 2020

Teaching Experience

Nov. 2026 (scheduled) **The University of Texas at Austin**
Guest Lecturer, Advanced Networks

Feb. 2026 **The University of Texas at Austin**
Guest Lecturer, Principles of Learned Systems

Aug.–Dec. 2020 **University of Wisconsin–Madison**
Teaching Assistant, Programming III

Jan. 2018–Dec. 2019 **Shanghai Jiao Tong University**
Teaching Assistant
Introduction to Engineering (Spring 2018); Introduction to Computers (Fall 2018); Programming & Elementary Data Structures (Spring 2019); Introduction to Operating Systems (Fall 2019).

Publications

- SIGMETRICS** **Online Batching with Lookahead: Adversarial Limits and Stochastic Gains**
2027 Dimitrios Christou, **Jiayi Chen**, Nihal Sharma, Aditya Akella, Shuchi Chawla, and Sanjay Shakkottai.
Accepted; forthcoming.
- NSDI** **UNUM: A New Framework for Network Control**
2026 **Jiayi Chen**, Nihal Sharma, Debajit Chakraborty, Saurabh Agarwal, Jeffrey Zhou, Aditya Akella, and Sanjay Shakkottai.
Paper
- DEMO at ICML** **From Offline Global Information to Online Decentralized Policies in Edge Network Scheduling**
2026 Justin Chang, Angela Zhang, **Jiayi Chen**, and Aditya Akella.
- MLSys at NeurIPS** **A Joint Learning Approach to Hardware Caching and Prefetching**
2025 Samuel Yuan, Divyanshu Saxena, **Jiayi Chen**, Nihal Sharma, and Aditya Akella.
Paper
- HotOS** **How I learned to stop worrying and love learned OS policies**
2025 Divyanshu Saxena^{*}, **Jiayi Chen**^{*}, Sujay Yadalam, Yeonju Ro, Rohit Dwivedula, Eric H. Campbell, Aditya Akella, Christopher J. Rossbach, and Michael Swift. ^{*} Equal contribution.
Paper
- SIGCOMM** **Darwin: Flexible Learning-based CDN Caching**
2023 **Jiayi Chen**, Nihal Sharma, Tarannum Khan, Shu Liu, Brian Chang, Aditya Akella, Sanjay Shakkottai, and Ramesh K. Sitaraman.
Paper | Talk
- MLSys at NeurIPS** **On a Foundation Model for Operating Systems**
2023 Divyanshu Saxena, Nihal Sharma, Donghyun Kim, Rohit Dwivedula, **Jiayi Chen**, Chenxi Yang, Sriram Ravula, Zichao Hu, Aditya Akella, Sebastian Angel, Joydeep Biswas, Swarat Chaudhuri, Isil Dillig, Alex Dimakis, Brighten P. Godfrey, Daehyeok Kim, Christopher Rossbach, and Gang Wang.
Paper
- Under review** **TARDIS: Online Event Relationship Embeddings for Systems Control**
Jiayi Chen, Aryan Khatri, Dimitrios Christou, Ayaan Dhuka, Apia Okorafor, Haoyu Li, Nihal Sharma, Saarth Deshpande, Venkat Arun, Aditya Akella, Sanjay Shakkottai, and Shuchi Chawla.
- Under review** **Towards Application-Guided Scheduling**
Haoyu Li, **Jiayi Chen**, Venkat Arun, and Aditya Akella.
- arXiv** **Accelerating Distributed Deep Learning using Lossless Homomorphic Compression**
2024 Haoyu Li, Yuchen Xu, **Jiayi Chen**, Rohit Dwivedula, Wenfei Wu, Keqiang He, Aditya Akella, and Daehyeok Kim.
arXiv:2402.07529
- arXiv** **SFC: Near-Source Congestion Signaling and Flow Control**
2023 Yanfang Le, Jeongkeun Lee, Jeremias Blendin, **Jiayi Chen**, Georgios Nikolaidis, Rong Pan, Robert Soule, Aditya Akella, Pedro Yebenes Segura, Arjun Singhvi, Yuliang Li, Qingkai Meng, Changhoon Kim, and Serhat Arslan.
arXiv:2305.00538

Invited Talks

ML for Systems in the Real World: Challenges Beyond Training the Models

- May 2026 University of Washington, SyFI Talk
- Mar. 2026 University of Maryland, Advanced Topics in Cloud Networking and Computing Seminar
- Mar. 2026 University of Wisconsin–Madison, MadSystems Seminar
- Mar. 2026 University of Illinois Urbana-Champaign, Systems Research Seminar
- Feb. 2026 Princeton University, Systems Seminar
- Nov. 2025 Cornell University, Systems Lunch

UNUM: A New Framework for Network Control

- Nov. 2025 LDOS Symposium

Darwin: Flexible Learning-based CDN Caching

- Aug. 2025 Microsoft Research, Networking Research Group

Service and Outreach

- Aug. 2025–
Present **LDOS Undergraduate Research Program**
Coordinator, The University of Texas at Austin
Lead undergraduate research program with 50–60 students annually.
- Jan.–May
2025 **LDOS Undergraduate Reading Group**
Coordinator, The University of Texas at Austin
Led the LDOS undergraduate reading group with 43 undergraduate students.
- Feb. 2025 **LDOS Booth Organizer**, UT Austin STEM Girl Day
- Mar. 2022 **Student Organizer**, UT Austin MLL Sys/ML Workshop [Website](#)

Mentoring

I have mentored more than 20 undergraduate, master's, and junior Ph.D. students. Here's a selected list of students who have worked closely with me, and their subsequent positions or graduate programs.

Doctoral Students

- Rishika Varma K** CS Ph.D. student at UT Austin
- Haoyu Li** CS Ph.D. student at UT Austin

Master's Students

- Debajit Chakraborty** CS M.S. at UT Austin → Machine Learning Engineer at Glean

Undergraduate Students

- Apia Okorafor** CS undergraduate student at UT Austin
- Ayaan Dhuka** CS undergraduate student at UT Austin
- Angela Zhang** CS undergraduate student at UT Austin
- Justin Chang** CS undergraduate student at UT Austin
- Jeffrey Zhou** CS undergraduate student at UT Austin
- Samuel Yuan** CS undergraduate student at UT Austin → Technical Staff at OpenAI
- Aryan Khatri** CS undergraduate student at UT Austin → Software Engineer at Jane Street
- Parth Shroff** CS undergraduate student at UT Austin → ECE M.S. student at Stanford University
- Shu (Lynn) Liu** CS undergraduate student at UW–Madison → CS Ph.D. student at UC Berkeley