Yi Xu

Ph.D. Student in Computer Science, University of Southern California
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EDUCATION

University of Southern California, Los Angeles, CA, USA

- **Ph.D. in Computer Science** Aug 2026 – Present

University of Science and Technology of China, Hefei, China

- **Master of Engineering in Computer Science and Technology** Sept 2023 – June 2026
  Cumulative GPA: 3.84/4.30 Rank: 44/148
  Advisor: Prof. Pan Peng
- **Bachelor of Engineering in Computer Science and Technology** Sept 2019 – June 2023
  Cumulative GPA: 3.70/4.30 Rank: 40/170

PUBLICATIONS

Conference Papers

- Yuhao Chen, **Yi Xu**, Xinyun Ding, Xiang Fang, Shuochen Liu, Luxi Lin, Qingyu Zhang, Ya Li, Quan Liu, Tong Xu. *VehicleMemBench: An Executable Benchmark for Multi-User Long-Term Memory in In-Vehicle Agents.* **COLM 2026**.
  Designed a multi-user memory benchmark that uses an executable in-vehicle simulation and state-based evaluation to reveal limitations of existing models.
- Pan Peng, Christian Sohler, **Yi Xu** (alphabetical order). *Sublinear Algorithms for Estimating Single-Linkage Clustering Costs.* **ESA 2026**.
  Developed sublinear-time algorithms for estimating hierarchical clustering costs; primarily responsible for key theorem proofs and experimental validation.
- Kyoungjun Park, Zhiyuan He, Cheng Luo, **Yi Xu**, Lili Qiu, et al. *Joint Optimization of Handoff and Video Rate in LEO Satellite Networks.* **IEEE INFOCOM 2026**.
  Worked on reinforcement learning models for adaptive bitrate and satellite selection.

Manuscripts

- Xinyu Mao, **Yi Xu**, Guangxu Yang (alphabetical order). *Exact Direct Sum Theorems for Shallow Circuits.* Submitted to ITCS 2027.
  Co-developed proofs of exact direct-sum theorems for depth-3 AC^0 and depth-4 NC^0 circuits.
- Zhiyuan He, **Yi Xu**, Cheng Luo, Lili Qiu, Yuqing Yang. *Replica Server Placement in a Satellite Network.*
  Applied greedy and local search algorithms for facility location problems to optimize CDN deployment via satellites.

TALKS

- **Women in Theory Workshop 2025**, Simons Institute. June 2025
  Student rump session: presented our work on sublinear algorithms for estimating SLC costs.
- **Theory Student Day 2025**, USTC. March 2025
  Invited talk: presented our work on sublinear algorithms for estimating SLC costs.
- **ASC24 Supercomputing Competition Startup**, Beijing, China Jan 2024
  Invited talk: Shared experiences as the team leader of an award-winning team.

INTERNSHIP EXPERIENCE

iFLYTEK Hefei, China
Algorithm Research Intern, COG Team, Core R&D Platform Dec 2025 – July 2026

- Designed a multi-user benchmark for evaluating long-term memory and decision-making in in-vehicle agents.
- Developed an LLM-based pipeline to generate instruction–response pairs and filter them using programmatic validators, supporting instruction-following training for iFLYTEK Spark.

Microsoft Research Asia (MSRA) Shanghai, China
Research Intern, Wireless Group Aug 2022 – March 2023

- Investigated algorithms for satellite networks, including adaptive bitrate selection and replica server placement; implemented signal processing on USRP and analyzed wireless sensing data in Python.

TEACHING EXPERIENCE

Teaching Assistant, University of Science and Technology of China, Hefei, China

- Design and Analysis of Algorithms (2024) & Algorithms for Big Data (2025)

PROJECTS

ASC22-23 International Supercomputing Competition Hefei, China
Team Leader Jan 2022 – May 2023

- Led a team to optimize various applications, including numerical simulation and large language models (LLMs).
- Accelerated a Fortran-based weather forecasting model (WRF) by developing data preprocessing pipelines to observe performance in large-scale datasets, and utilizing Intel VTune to analyze and enhance runtime performance.
- Awarded **2nd place** out of 300 teams worldwide.

VSCode–Azure DevOps Integration Extension Microsoft Research Asia, Shanghai, China
Team Leader Sept 2022 – Dec 2022

- Led the design and development of a Visual Studio Code extension enabling pull request (PR) workflows with Azure DevOps.
- Coordinated implementation of secure login, comment management and integration of profile images into PR dashboards.
- Implemented core functionalities including PR creation, display, and completion directly within VSCode.

ISC21 International Supercomputing Competition Online
Participant Oct 2020 – June 2021

- Enhanced a Fortran-based weather forecasting model (WRF) by optimizing compilation flags and parallelization strategies.
- Conducted and improved supercomputing benchmarks (HPL and HPCG) through parameter tuning.
- Ranked **1st** on the WRF application and **6th** overall among 13 finalist teams in the competition.

AWARDS & SCHOLARSHIPS

- **First-Class Academic Scholarship**, University of Science and Technology of China (2023, 2024)
- **Silver Prize**, ASC22-23 International Supercomputing Competition (2023)
- **Outstanding Graduate**, University of Science and Technology of China (Undergraduate, 2023)
- **Star of Tomorrow**, Microsoft Research Asia (2022)
- **Silver Award**, Outstanding Student Scholarship, University of Science and Technology of China (2019, 2020)

SKILLS

Programming: Python, C++, JavaScript, Shell, Verilog
Tools and Platforms: Linux, STM32, USRP, Intel VTune