

Yiqi Zhao

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EDUCATION

University of Southern California

PhD Student in Computer Science

Los Angeles, USA

2023/08 - Present

- GPA: 4.0/4.0
- Supervisors: [Prof. Jyotirmoy V. Deshmukh](#); [Prof. Yue Wang](#)
- Viterbi School of Engineering Fellowship

University of Southern California

Master of Science in Computer Science

Los Angeles, USA

2023/08 - 2025/08

- GPA: 4.0/4.0

Vanderbilt University

Bachelor of Science, Magna Cum Laude

Nashville, USA

2020/08 - 2023/05

- GPA: 3.935/4.0
- Majors: Honors in Computer Science; Mathematics
- Minors: Electrical Engineering; Data Science
- Dean's List; Good Standing

RESEARCH INTERESTS

Robotics, Cyber-Physical Systems, Formal Methods, Systems and Control Theory

CURRENT PROJECTS AND INTERESTS

Multirobot Behavior Model; Safety-aware Motion Planning with Signal Temporal Logic

JOURNAL PAPERS (* INDICATES EQUAL CONTRIBUTION.)

[j5] Lars Lindemann, **Yiqi Zhao**, Xinyi Yu, George J. Pappas, Jyotirmoy V. Deshmukh. "Formal Verification and Control with Conformal Prediction: Practical Safety Guarantees for Autonomous Systems". *IEEE Control Systems*. 2025. [[paper](#)] [[tutorial](#)]

[j4] **Yiqi Zhao***, Xinyi Yu*, Bardh Hoxha, Georgios Fainekos, Jyotirmoy V. Deshmukh, and Lars Lindemann. "STL-GO: Spatio-Temporal Logic with Graph Operators for Distributed Systems with Multiple Network Topologies". *ACM Transactions on Embedded Computing Systems; the ACM SIGBED International Conference on Embedded Software (EMSOFT 2025, ESWEEK)*, Taipei, 2025. [[paper](#)]

[j3] Xinyi Yu, **Yiqi Zhao**, Xiang Yin, and Lars Lindemann. "Signal Temporal Logic Control Synthesis among Uncontrollable Dynamic Agents with Conformal Prediction". *Automatica*. 2025. [[paper](#)] [[codes](#)] (**Regular Paper**)

[j2] **Yiqi Zhao**, Emily Zhu, Bardh Hoxha, Georgios Fainekos, Jyotirmoy V. Deshmukh, Lars Lindemann. "Distributionally Robust Predictive Runtime Verification under Spatio-Temporal Logic Specifications". *ACM Transactions on Cyber-physical Systems*. 2025. [[paper](#)] [[codes](#)]

[j1] Ziyan An, **Yiqi Zhao**, Xuqing Gao, Ayan Mukhopadhyay, Meiyi Ma. "Formal Logic-Guided Harnessing Heterogeneous Fairness Rules in Smart Cities". *ACM Transactions on Cyber-physical Systems*. 2025. [[paper](#)]

CONFERENCE PAPERS

[c3] Anand Balakrishnan, Rohit Bernard, Shreeram Narayanan, Vidisha Kudalkar, **Yiqi Zhao**, Parinitha Nagaraja, Georgi Markov, Christof Budnik, Helmut Degen, Lars Lindemann, Jyotirmoy V. Deshmukh. "Safety Assurance for Autonomous Systems with Multiple Sensor Modalities". *The 22nd ACM-IEEE International Symposium on Formal Methods and Models for System Design (MEMOCODE)*, Raleigh, USA. 2024. [[paper](#)]

[c2] **Yiqi Zhao**, Bardh Hoxha, Georgios Fainekos, Jyotirmoy V. Deshmukh, and Lars Lindemann. "Robust Conformal Prediction for STL Runtime Verification under Distribution Shift". *The 15th ACM/IEEE International Conference on Cyber-Physical Systems*, Hong Kong, China. 2024. **Best Paper Award Finalist.** [[paper](#)] [[codes](#)]

[c1] **Yiqi Zhao**, Ziyan An, Xuqing Gao, Ayan Mukhopadhyay, Meiyi Ma. "Fairguard: Harness Logic-based Fairness Rules in Smart Cities". *The 8th ACM/IEEE Conference on Internet of Things Design and Implementation*, San Antonio, USA. 2023. [[paper](#)]

IN SUBMISSION (* INDICATES EQUAL CONTRIBUTION.)

[s2] **Yiqi Zhao***, Xinyi Yu*, Matteo Sesia, Jyotirmoy V. Deshmukh, and Lars Lindemann. "Conformal Predictive Programming for Chance Constrained Optimization". *Arxiv*, 2025. *Currently under review in Automatica*. [[paper](#)] [[codes](#)]

PREPRINTS

[p1] **Yiqi Zhao**, Ziyan An, Meiyi Ma, and Taylor Johnson. "EduSAT: A Pedagogical Tool for Theory and Applications of Boolean Satisfiability". *Arxiv*, 2023. [[paper](#)] [[tool](#)]

NON-AUTHORSHIP ACKNOWLEDGED CONTRIBUTIONS

[o2] Junyang Cai, Weimin Huang, Jyotirmoy V. Deshmukh, Lars Lindemann, Bistra Dilkina. "Neuro-Symbolic Acceleration of MILP Motion Planning with Temporal Logic and Chance Constraints". *Arxiv*, 2025. [[paper](#)] (Acknowledged for the help.)

[o1] Hanwen Liu, Shashank Giridhara, Ibrahim Sabek. "Conformal Prediction for Verifiable Learned Query Optimization". *Arxiv*, 2025. [[paper](#)] (Acknowledged for the support.)

WORK/TEACHING EXPERIENCE

Research and Development Intern, Toyota Research Institute of North America <i>Focus: Cyber-Physical Systems</i>	Ann Arbor, USA 2025/05 - 2025/08
• Worked on Cyber-Physical Systems Research at the Future Research Department.	
Research Assistant, University of Southern California <i>Affiliation: University of Southern California</i>	Los Angeles, USA 2024/08 - 2025/05, 2025/05 - Now
• PhD Research and assistantship in advisors' research.	
Grader of CS 4260 (Artificial Intelligence), Vanderbilt University <i>Advisors: Meiyi Ma, Daniel Moyer</i>	Nashville, USA 2022/08 - 2023/05
• Graded students' homework and exams and held TA office hours regularly.	
Application Development Intern, ADP <i>Affiliation: Global Product & Tech group</i>	Roseland, USA 2022/06 - 2022/08
• Developed API for the Autopay Group.	

SELECTED HONORS

ICCPs Best Paper Award Finalist <i>Awarded at the 15th ACM/IEEE International Conference on Cyber-Physical Systems for the paper "Robust Conformal Prediction for STL Runtime Verification under Distribution Shift".</i>	May. 2024
Viterbi School of Engineering Fellowship <i>Awarded for selected incoming PhD students at Viterbi School of Engineering, USC.</i>	Aug. 2023
VISE Award (Vanderbilt Institute for Surgery and Engineering Summer Fellowship) <i>Awarded for the paid fellowship at the Vanderbilt Institute for Surgery and Engineering Summer Fellows Program.</i>	2021

ACADEMIC SERVICES

Journal Reviews for NAHS <i>Conference Reviews for ACC 2024, VMCAI 2024, CDC 2024, ICLR 2025, AISTATS 2025, HSCC 2025, L4DC 2025, ICCPS 2025, NEUS 2025, MECC 2025, ICRA 2026, AISTATS 2026, L4DC 2026.</i>	
Conference PC Member and Reviews for HSCC 2024 (Repeatability Evaluation), HSCC 2025 (Repeatability Evaluation), ICCPS 2025 (Posters and Demos).	
Tutorial on Formal Verification and Control with Conformal Prediction at the CPS-IoT Week 2025 [home-page].	05/06/2025

SELECTED TALKS

The 15th ACM/IEEE International Conference on Cyber-Physical Systems	05/16/2024
The 43rd Southern California Control Workshop (with Xinyi Yu)	04/19/2024
The 8th ACM/IEEE Conference on Internet of Things Design and Implementation	May 2023

SKILLS

Programming Languages Python, Javascript, C++, C, MATLAB, Java, SQL.
Mandarin Chinese (native), English