

# 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

## JOURNAL PAPERS (\* INDICATES EQUAL CONTRIBUTION.)

[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* - to be presented at *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] Ziyang 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**, Ziyang 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](#)]

[s1] Lars Lindemann, **Yiqi Zhao**, Xinyi Yu, George J. Pappas, Jyotirmoy V. Deshmukh. "Formal Verification and Control with Conformal Prediction". *Arxiv*, 2024. *Currently under review in IEEE Control Systems Magazine*. [[paper](#)] [[tutorial](#)]

## 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** Ann Arbor, USA  
*Focus: Cyber-Physical Systems* 2025/05 - 2025/08

- Worked on Cyber-Physical Systems Research at the Future Research Department.

**Research Assistant, University of Southern California** Los Angeles, USA  
*Affiliation: University of Southern California* 2024/08 - 2025/05, 2025/05 - Now

- PhD Research and assistantship in advisors' research.

**Grader of CS 4260 (Artificial Intelligence), Vanderbilt University** Nashville, USA  
*Advisors: [Meiyi Ma](#), [Daniel Moyer](#)* 2022/08 - 2023/05

- Graded students' homework and exams and held TA office hours regularly.

**Application Development Intern, ADP** Roseland, USA  
*Affiliation: Global Product & Tech group* 2022/06 - 2022/08

- Developed API for the Autopay Group.

## SELECTED HONORS

**ICCPs Best Paper Award Finalist** May. 2024  
*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".*

**Viterbi School of Engineering Fellowship** Aug. 2023  
*Awarded for selected incoming PhD students at Viterbi School of Engineering, USC.*

**WISE Award** (Vanderbilt Institute for Surgery and Engineering Summer Fellowship) 2021  
*Awarded for the paid fellowship at the Vanderbilt Institute for Surgery and Engineering Summer Fellows Program.*

## ACADEMIC SERVICES

**Journal Reviews** for Computing, NAHS

**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.

**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

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