

# Yiqi Zhao

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## EDUCATION

<b>University of Southern California</b> <i>PhD Student in Computer Science</i> <ul style="list-style-type: none"><li>• GPA: 4.0/4.0</li><li>• Supervisors: <a href="#">Prof. Jyotirmoy V. Deshmukh</a>; <a href="#">Prof. Yue Wang</a></li><li>• Viterbi School of Engineering Fellowship</li></ul>	Los Angeles, USA 2023/08 - Present
<b>University of Southern California</b> <i>Master of Science in Computer Science</i> <ul style="list-style-type: none"><li>• GPA: 4.0/4.0</li></ul>	Los Angeles, USA 2023/08 - 2025/08
<b>Vanderbilt University</b> <i>Bachelor of Science, Magna Cum Laude</i> <ul style="list-style-type: none"><li>• GPA: 3.935/4.0</li><li>• Majors: Honors in Computer Science; Mathematics</li><li>• Minors: Electrical Engineering; Data Science</li><li>• Dean's List; Good Standing</li></ul>	Nashville, USA 2020/08 - 2023/05

## RESEARCH INTERESTS

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

## JOURNAL PAPERS

- [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.)

- [s3] **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](#)]

[s2] Xinyi Yu\*, **Yiqi Zhao\***, 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". *Currently under review*.

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

## OTHER SCHOLARLY CONTRIBUTIONS

[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

- Working 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

- 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 a Notification Replay 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.

**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