

# Yiqi Zhao

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2211 South Budlong Avenue, Los Angeles, CA, 90007, USA

## 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

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

## 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

<b>Research and Development Intern, Toyota Research Institute of North America</b> <i>Focus: Cyber-Physical Systems</i> <ul style="list-style-type: none"><li>Working on Cyber-Physical Systems Research at the Future Research Department.</li></ul>	Ann Arbor, USA 2025/05 - 2025/08
<b>Research Assistant, University of Southern California</b> <i>Affiliation: University of Southern California</i> <ul style="list-style-type: none"><li>PhD Research and assistantship in advisors' research.</li></ul>	Los Angeles, USA 2024/08 - 2025/05
<b>Grader of CS 4260 (Artificial Intelligence), Vanderbilt University</b> <i>Advisors: <a href="#">Meiyi Ma</a>, <a href="#">Daniel Moyer</a></i> <ul style="list-style-type: none"><li>Graded students' homework and exams and held TA office hours regularly.</li></ul>	Nashville, USA 2022/08 - 2023/05
<b>Application Development Intern, ADP</b> <i>Affiliation: Global Product &amp; Tech group</i> <ul style="list-style-type: none"><li>Developed a Notification Replay API for the Autopay Group.</li></ul>	Roseland, USA 2022/06 - 2022/08

## SELECTED HONORS

<b>ICCPs Best Paper Award Finalist</b> <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
<b>Viterbi School of Engineering Fellowship</b> <i>Awarded for selected incoming PhD students at Viterbi School of Engineering, USC.</i>	Aug. 2023
<b>WISE Award</b> (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

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

## SELECTED TALKS

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

**SKILLS**

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