

Yiqi Zhao

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

EDUCATION

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

RESEARCH INTERESTS

Formal Methods, Cyber Physical System, Systems and Control Theory, Mathematical Optimization

CONFERENCE PAPERS

- [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](#)]

PREPRINTS

- [p4] Lars Lindemann, **Yiqi Zhao**, Xinyi Yu, George J. Pappas, Jyotirmoy V. Deshmukh. "Formal Verification and Control with Conformal Prediction". *Arxiv*, 2024. [[paper](#)]
- [p3] **Yiqi Zhao***, Xinyi Yu*, Jyotirmoy V. Deshmukh, and Lars Lindemann. "Conformal Predictive Programming for Chance Constrained Optimization". *Arxiv*, 2024. [[paper](#)] [[codes](#)] (* indicates equal contribution.)
- [p2] Xinyi Yu, **Yiqi Zhao**, Xiang Yin, and Lars Lindemann. "Signal Temporal Logic Control Synthesis among Uncontrollable Dynamic Agents with Conformal Prediction". *Arxiv*, 2023. [[paper](#)] [[codes](#)]
- [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](#)]

RESEARCH EXPERIENCE

VIDA Lab, SAIDS Lab, University of Southern California <i>PhD Student, Advisors: Jyotirmoy V. Deshmukh, Prof. Lars Lindemann</i> <ul style="list-style-type: none">• Conformal Predictive Programming (CPP)<ul style="list-style-type: none">– Proposed an algorithm for Chance Constrained Optimization (CCO) Problems via incorporating the recent developments of Conformal Prediction.• Robust STL Runtime Verification<ul style="list-style-type: none">– Introduced Runtime Verification with Signal Temporal Logic (STL) using Conformal Prediction in instances of distribution shift from training to testing environment.	Los Angeles, USA 2023/08 - Present
Meiyi Ma's Group, Vanderbilt University <i>Research Assistant, Advisor: Meiyi Ma</i> <ul style="list-style-type: none">• Fairguard for Smart City<ul style="list-style-type: none">– Introduced Fairguard, a micro-level temporal logic-based approach for fair smart city design in complex temporal-spatial domains.	Nashville, USA 2021/11 - 2023/08

BAGL Lab, Vanderbilt Institute for Surgery and EngineeringSummer Fellow, Advisor: [Jack Noble](#)

Nashville, USA

2021/06 - 2021/08

- Ultrasound Image Processing with Machine Learning Techniques
 - Studied and practiced Image Segmentation Techniques with an existing U-Net Architecture.
 - Focused on data preprocessing, cross validation, and outcome evaluations, etc.

WORK/TEACHING EXPERIENCE**Research Assistant), University of Southern California**

Los Angeles, USA

Affiliation: *University of Southern California*

2024/08 - Current

- 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 (GPT) group*

2022/06 - 2022/08

- Developed the Notification Replay API for the Autopay Group through an Agile Environment.

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 Con-formal 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****Reviews** for Computing, HSCC 2024 (Repeatability Evaluation), ACC 2024, VMCAI 2024, CDC 2024.**Organizer:** I organized a reading group on Formal Methods for Control and Autonomous Systems at USC.**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.
Mandarin Chinese (native), English