

Yiqi Zhao

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2638 Portland St., Sierra Apartments, Los Angeles, CA90007, 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 EXPERIENCE**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 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

Reviews for Computing, HSCC 2024 (Repeatability Evaluation), ACC 2024, VMCAI 2024, CDC 2024.

Organizer: I organized a reading group on formal methods and safe learning-enabled components at USC.

SELECTED TALKS**The 15th ACM/IEEE International Conference on Cyber-Physical Systems**

05/16/2024

The 43rd Southern California Control Workshop

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