

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

- [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 Engineering <i>Summer Fellow, Advisor: Jack Noble</i> <ul style="list-style-type: none">• Ultrasound Image Processing with Machine Learning Techniques	Nashville, USA 2021/06 - 2021/08

- 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
<i>Advisors: Meiyi Ma, Daniel Moyer</i>	2022/08 - 2023/05
• Graded students' homework and exams and held TA office hours regularly.	
Application Development Intern, ADP	Roseland, USA
<i>Affiliation: Global Product & Tech (GPT) group</i>	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
<i>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".</i>	
Viterbi School of Engineering Fellowship	Aug. 2023
<i>Awarded for selected incoming PhD students at Viterbi School of Engineering, USC.</i>	
WISE Award (Vanderbilt Institute for Surgery and Engineering Summer Fellowship)	2021
<i>Awarded for the paid fellowship at the Vanderbilt Institute for Surgery and Engineering Summer Fellows Program.</i>	

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
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