NAVID HASHEMI

@ navidhas@usc.edu +1-3233823023 California, USA

EDUCATION

PhD program in Computer Science
University of Southern California (USC)
Degree conferral: December 2024 GPA - 3.85

M.Sc Degree in Computer Science
University of Southern California (USC) **GPA :3.85**

M.Sc Degree in Mechanical Engineering
University of Texas at Dallas (UTD) **GPA :3.83**

B.Sc Degree in Mechanical Engineering
Amirkabir University of Technology **GPA :3.49**

WORK EXPERIENCE

Research Scientist Intern at Toyota Research Institute (TRINA)

May 2022 - August 2022

- Created the first deterministic formal verification framework for Signal Temporal Logics.

10 Semesters Research Assistantship in USC

January 2021-present

- Worked in the intersection of Machine Learning, Formal Methods and Temporal Logics with application on Cyber-Physical Systems (CPS) and Reinforcement Learning.

2 Semesters Teachnig Assistantship in USC

August 2023-May 2024

- Taught programming with C++ to undergraduate students, I was also teaching Autonomous Cyber-Physical Systems to graduate students.

HONORS & AWARDS

- **ANNENBERG FELLOWSHIP** | for top 5% admitted students in USC.
- **ANNENBERG FELLOWSHIP** | for top researches on multi-agent systems.

SKILLS

Python | MATLAB | C++ | Java | Latex | Microsoft Office | Apache Kafka | Apache Spark

COURSEWORK

- Deep Learning and its Applications
- Theory of Machine Learning
- Advanced Natural Language Processing
- Big Data
- Introduction to Machine Learning
- Advanced Analysis of Algorithms
- Data Structure and Algorithm Analysis
- Discrete Structures
- Formal Language and Automata Theory
- Autonomous Cyber-Physical Systems
- Dynamics of Complex Networks
- Engineering Optimization
- Random Processes
- Linear Systems
- Optimal Control & Dynamic programming
- Optimal Estimation and Kalman Filtering
- Convex Optimization
- Stability & Bifurcations of Nonlinear systems

FIELD OF INTEREST

- Deep Learning and Machine Learning
- Foundation models & Large Language Models
- Robustness analysis of Deep Neural Networks
- Neurosymblic-AI and Reinforcement Learning

PERSONAL TRAITS

- Highly motivated & eager to learn new things.
- Strong motivational and leadership skills.
- Ability to work individually & in a team.

PUBLICATIONS on NEURO-SYMBOLIC AI & its VERIFICATION

- *Scaling Learning based Policy Optimization for Temporal Tasks via Dropout* -(TCPS 2024)
- *Learning based Statistical Reachability Analysis of Stochastic Cyber-Physical Systems under Distribution Shift* -(TCAD 2024)
- *A Neurosymbolic Approach to the Verification of Temporal Logic Properties of Learning enabled Control Systems*-(ICCPS 2023)
- *Certifying Incremental Quadratic Constraints for Neural Networks via Convex Optimization*- (PMLR)
- *LB4TL: Smooth Semantics for Temporal Logic for Scalable Training of Neural Feedback Controllers*- (IFAC-PapersOnLine)
- *Data-Driven Reachability Analysis of Stochastic Dynamical Systems with Conformal Inference*-(CDC 2023)
- *Risk-Awareness in Learning Neural Controllers for Temporal Logic Objectives*-(ACC 2023)
- *Performance Bounds for Neural Network Estimators: Applications in Fault Detection*-(ACC 2021)
- **I have 4 Journals and 15 Conference papers please see my Google Scholar profile for more detail.**