

Kishor Jothimurugan

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Research Interests

- Applications of Formal Methods in Reinforcement Learning
- Verification of Neural Networks
- Static Analysis and Verification

Education

Academic Qualifications.....

- **University of Pennsylvania** **Philadelphia, USA**
PhD candidate in Computer and Information Science, Current GPA 4.0/4.0 2017–present
Advised by Prof. Rajeev Alur
- **Chennai Mathematical Institute** **Chennai, India**
B.Sc. (Hons) Mathematics and Computer Science, CGPA 9.77/10 2014–2017
Ranked among top 3 students
- **Arsha Vidya Mandir, CBSE** **Chennai, India**
High School, Overall percentage 96.8 2012–2014

Research

Publications.....

- **A Composable Specification Language for Reinforcement Learning Tasks**, Kishor Jothimurugan, Rajeev Alur, Osbert Bastani. *Neural Information Processing Systems (NeurIPS)*, 2019.
- **Space-efficient Query Evaluation over Probabilistic Event Streams**, Rajeev Alur, Yu Chen, Kishor Jothimurugan, Sanjeev Khanna. *Logic in Computer Science (LICS)*, 2020.

Drafts and Submissions.....

- **Abstract Value Iteration for Hierarchical Deep Reinforcement Learning**, Kishor Jothimurugan, Osbert Bastani, Rajeev Alur. *In submission*.
- **Techniques for Verifying Robustness of Neural Networks**, Kishor Jothimurugan. *WPE II Report*.

Internships and Summer Schools

- *Research Intern at Nokia Bell Labs, Summer 2020.* An application of deep reinforcement learning to logistics optimization.
- *SDE Intern at Amazon Web Services, Summer 2019.* Using machine learning to improve usability of taint analysis.
- *Marktoberdorf Summer School, Summer 2018.* Summer school on Engineering Secure and Dependable Software Systems.
- *Research Intern at LSV, ENS Cachan, Summer 2017.* Models for distributed reactive synthesis.

Teaching

- *Graduate TA (Spring 2019):* Principles of Embedded Systems (CIS 540).
- *Graduate TA (Fall 2018):* Automata, Computability and Complexity (CIS 262).
- *Undergraduate TA (Spring 2017):* Discrete Mathematics.
- *Online TA:* Design and Analysis of Algorithms (NPTEL MOOC).

Technical skills

- **Programming Languages:** C++ (fluent), Python (fluent), MATLAB (fluent), Java (fluent), Coq.
- **Tools:** \LaTeX , Git, Bash, Flow*, StableBaselines.
- **Frameworks:** Tensorflow, Pytorch, Pandas, Soot.

Academic Achievements

- Selected for summer student exchange program between CMI and ENS Paris (Awarded to top 3 students).
- Qualified for ACM ICPC India Regionals 2016 (Chennai and Coimbatore).
- State Rank 11 in Indian National Science Talent Search Examination 2014.

Languages

- **Fluent:** English, Hindi
- **Native:** Tamil