PRANAV ASHOK

PERSONAL INFORMATION

Born in India, 30 December 1991

email	pranavashok@gmail.com
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WORK EXPERIENCE

Technical University of Munich

2016–   Doctoral Candidate, TUM

Working broadly on the interface between machine learning and formal verification, specializing in exact/approximate verification methods for Markov Decision Processes.

Commvault Systems, India

2013–2014   Associate Member of Technical Staff, COMMVAULT

Worked on hardware based snapshot technologies for enterprise level Storage Area Networks.

Arbitron, India

2012   Summer Intern, ARBITRON

Worked on a Training Management System using JavaServer Faces 2.0, a web application framework.

EDUCATION

Masters

2014-2016   Chennai Mathematical Institute, India

MSc in Computer Science · *Analysis of the backward reachability problem in Probabilistic Timed Automata* · GPA: 8.75

Bachelors

2009-2013   National Institute of Technology, Calicut, India

B. Tech in Computer Science and Engineering · GPA: 7.72

PUBLICATIONS

2018

Pranav Ashok, Yuliya Butkova, Holger Hermanns, and Jan Křetínskỳ. Continuous-time markov decisions based on partial exploration. *ATVA*, 2018

Pranav Ashok, Tomáš Brázdil, Jan Křetínský, and Ondřej Slámečka. Monte carlo tree search for verifying reachability in markov decision processes. *ISoLA*, 2018

2017

Pranav Ashok, Krishnendu Chatterjee, Przemyslaw Daca, Jan Křetínskỳ, and Tobias Meggendorfer. Value iteration for long-run average reward in markov decision processes. *Computer Aided Verification*, 2017

SELECTED PROJECTS (PRE-2016)

	2015 Backward Reachability Algorithm for PTAs

Masters Thesis

Title · Analysis of the reachability problem for probabilistic timed automata.
Advisor · Prof. B Srivathsan
Description · We analyzed the existing reachability algorithms for Probabilistic Timed Automata and proposed an improvement for the backwards analysis approach. We tested the improvement on the PRISM Model Checker and discovered that our implementation performs better than PRISM's backwards engine and in-par with the existing algorithms for most test cases.

2013   Music Composition using Probabilistic Analysis

Bachelors Project

Technologies · *Python 2.7, GIT Revision Control*
Description · Analyses one or more MIDI files and generates a Prediction Suffix Automata using which music on the same scales or Indian classical raagas may be generated. Worked under the supervision of Prof. Murali Krishnan K.

Additional Note

The source-code for most of the projects I have done in public domain is available in my GitHub repository · Pranav Ashok (pranavashok) on GitHub

CAPABILITIES

Advanced

C, HTML/CSS, Adobe Photoshop, Linux

Intermediate

C++, PHP, SQL, PYTHON, JAVA, JAVASCRIPT, HASKELL, LATEX, Git Version Control

OTHER INFORMATION

Vocational Interests

Algorithm Design, Automata Theory, Verification, Functional Languages, Systems, Inter-disciplinary Sciences, Design, Web Development and Coding

Other Interests

Popularizing Science, Playing Violin, Exploring Places, Amateur Photography

Published Articles

'Are rational numbers countable?' (translated) in the science magazine, *Teacher*, published by Bharat Gyan Vigyan Samithi (BGVS)

Positions

Head of Design Team 2011, NIT Calicut

Member of Literary and Debating Club & FOSSCell, NIT Calicut

Languages

KONKANI (Mother tongue), ENGLISH (Fluent), MALAYALAM (Intermediate), HINDI (Intermediate)