PRANAV ASHOK

PERSONAL INFORMATION

Born in India, 30 December 1991

email pranavashok@gmail.com

website pranavashok.in

WORK EXPERIENCE

2016– **Doctoral Candidate, TUM**

Technical University of Munich

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

2013–2014 **Associate Member of Technical Staff, Commvault**

Commvault Systems, India

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

2012 **Summer Intern, Arbitron**

Arbitron, India

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

2011 **Chief Web Developer, Tathva and Ragam**

Technical/Cultural Fests of NIT Calicut

Worked on three websites from scratch, which included the newest of developments of the time — CSS3 animations and HTML5 canvas as well as extensive use of jQuery.

EDUCATION

2014-2016 **Chennai Mathematical Institute, India**

Masters

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

2009-2013 **National Institute of Technology, Calicut, India**

Bachelors

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

PUBLICATIONS

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

PRESENTATIONS / TALKS

2017

Mean-payoff objectives for Markov Decision Processes. *QAPL 2017* and *Masaryk University*.

2016

An Analysis of the reachability problem in Probabilistic Timed Automata. *PUMA Workshop 2016*

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, Open Knowledge, 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)