

# ASHWANI ANAND

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Max Planck Institute for Software Systems (MPI-SWS)  
Kaiserslautern, Germany  
ashwani@mpi-sws.org

**OBJECTIVE**      Doctoral student with special interests in the intersection of Mathematics and Theoretical Computer Science. Has experience in verification and synthesis of distributed systems. Looking for opportunities to investigate formal methods for real-world application.

**EDUCATION**      **PhD** **2021 - Aug 2024 (expected)**  
Max Planck Institute for Software Systems (MPI-SWS),  
Kaiserslautern, Germany  
Advised by Prof. Rupak Majumdar and Dr. Anne-Kathrin Schmuck

**Master of Science(Computer Science)** **2019 - 2021**  
Chennai Mathematical Institute (CMI), Chennai, India  
CGPA - 09.88/10

**Bachelor of Science**  
**(Mathematics and Computer Science)(Hons.)** **2016 - 2019**  
Chennai Mathematical Institute (CMI), Chennai, India  
CGPA - 08.09/10

**EXPERIENCES**      • *Internship* Nov 2023 - present  
at Amazon Web Services, New York, USA  
manager: Nafi Diallo

• *Thesis Internship* July 2020 - June 2021  
on Models of computing  
at Max Planck Institute for Software Systems, Kaiserslautern, Germany  
under the guidance of Dr. Georg Zetsche

• *Project* Mar 2021 - Aug 2021  
Advanced graph algorithms  
at CMI  
under the guidance of Prof. Prajakta Nimbhorkar

• *Summer Research Internship* May - July 2019  
at Laboratoire Bordelais de Recherche en Informatique  
Université de Bordeaux, Bordeaux, France  
Under the guidance of Dr. Jérôme Leroux  
and Dr. Nathanaël Fijalkow

• *Summer Research Internship* May - July, 2018  
at Institut de Recherche en Informatique Fondamentale  
Université Paris Diderot, Paris, France  
Under the guidance of Dr. Thomas Colcombet  
and Dr. Sylvain Schmitz

- PUBLICATIONS**
- *Contract-Based Distributed Synthesis in Two-Objective Parity Games*  
under review  
with S. P. Nayak, and A.-K. Schmuck
  - *Priority Downward Closures*  
at CONCUR 2023  
with G. Zetsche
  - *Synthesizing Permissive Winning Strategy Templates for Parity Games*  
at CAV 2023  
with S. P. Nayak, and A.-K. Schmuck
  - *Computing Adequately Permissive Assumptions for Synthesis*  
at TACAS 2023  
with K. Mallik, S. P. Nayak, and A.-K. Schmuck
  - *New Algorithms for Combinations of Objectives using Separating Automata*  
at GandALF 2021  
with N.Fijalkow, A. Goubault-Larrecq, J. Leroux, and P. Ohlmann
- TALKS**
- *Priority Downward Closure* Oct, 2023  
at Theorietag 2023, Kaiserslautern, Germany
  - *To Assume, Or Not To Assume* May, 2023  
for 'Analysis of Computer Systems' group at New York University
- SKILLS**
- *Programming:* Python, C++
  - *Others:* Unix, Git
- TEACHING ASSISTANCE**
- Complexity theory (TU-KL 2021), Concurrency theory (CMI 2019), Discrete mathematics (CMI 2019, 2021), Linear optimisation (CMI 2020), Weighted automata (CMI 2020), Modern application development (NPTEL 2020), Design and analysis of algorithms (CMI 2020)
- PERSONAL DETAILS**
- D.O.B.* - 15 May, 1998  
*Languages* - English, Hindi, German(A2)  
*Interests* - Reading books, Writing poems
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