

# ARAMBAM JAMES SINGH

School of Computer Science & Engineering, Nanyang Technological University Singapore  
jamesarambam.github.io

## EDUCATION

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<b>Singapore Management University</b> School of Computing & Information Systems PhD in Computer Science	<i>Jan. 2017 - Aug. 2021</i>
<b>National Institute of Technology Durgapur, India</b> Department of Computer Science, Master of Technology (M.Tech) in Information Technology (Gold Medalist)	<i>Aug. 2012 - June 2014</i>
<b>National Institute of Technology Silchar, India</b> Department of Electronics & Communication Engineering, Bachelor of Technology in Electronics & Comm. Engg.	<i>July 2006 - June 2010</i>

## RESEARCH INTEREST

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Artificial Intelligence/Machine Learning — Reinforcement learning (RL), Multiagent RL

## EMPLOYMENT

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<b>Research Fellow</b> School of Computer Science & Engineering, Nanyang Technological University (NTU), Singapore	<i>Jan. 2023 - present</i>
<b>Research Fellow</b> Department of Computer Science, National University of Singapore (NUS)	<i>Sep. 2021 - Sep. 2022</i>
<b>Research Engineer</b> School of Computing & Information Systems Singapore Management University	<i>Nov. 2014 - Nov. 2016</i>
<b>Assistant Software Engineer</b> Sopra Steria India Ltd.	<i>Aug. 2010 - July 2012</i>

## PUBLICATIONS

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1. **Arambam James Singh**, Arvind Easwaran. *PAS: Probably Approximate Safety Verification of Reinforcement Learning Policy Using Scenario Optimization*. Accepted in International Conference on Autonomous Agents and MultiAgent Systems (**AAMAS-2024**)
2. Jiaping Ling, **Arambam James Singh**, Duc Thien Nguyen, Akshat Kumar. *Constrained Multiagent Reinforcement Learning for Large Agent Population*. Accepted in European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML PKDD-2022**).
3. Chaithanya Basrur, **Arambam James Singh**, Arunesh Sinha, Akshat Kumar, T.K Satish Kumar. *Trajectory Optimization for Safe Navigation in Maritime Traffic Using Historical Data*. Accepted in International Conference on Principles and Practice of Constraint Programming (**CP-2022**, ML Track).
4. **Arambam James Singh**, Akshat Kumar, Hoong Chuin Lau. *Learning and Exploiting Shaped Reward Models for Large Scale Multiagent RL*. Accepted in International Conference on Automated Planning and Scheduling (**ICAPS-2021**).

5. **Arambam James Singh**, Akshat Kumar, Hoong Chuin Lau. *Approximate Difference Rewards for Scalable Multiagent Reinforcement Learning (Extended Abstract)*. Accepted in International Conference on Autonomous Agents and MultiAgent Systems (**AAMAS-2021**).
6. Chaithanya Basrur, **Arambam James Singh**, Arunesh Sinha, Akshat Kumar. *Ship-Gan: Generative Modeling Based Maritime Traffic Simulator (Demo paper)*. Accepted in International Conference on Autonomous Agents and MultiAgent Systems (**AAMAS-2021, Best Demo Award**)
7. **Arambam James Singh**, Akshat Kumar, Hoong Chuin Lau. *Hierarchical Multiagent Reinforcement Learning for Maritime Traffic Management*. In proceedings of International Conference on Autonomous Agents and MultiAgent Systems (**AAMAS-2020**).
8. **Arambam James Singh**, Duc Thien Nguyen, Akshat Kumar, Hoong Chuin Lau, *Multiagent Decision Making For Maritime Traffic Management*. In proceedings of AAAI Conference on Artificial Intelligence (**AAAI-2019**).
9. **Arambam James Singh**, Akshat Kumar, *Graph Based Optimisation For Multiagent Cooperation*. In proceedings of International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-2019**).
10. **Arambam James Singh**, Akshat Kumar, *Multiagent Coordination Using Graph Structured Mathematical Optimization (Extended Abstract)*. In proceedings of International Conference on Autonomous Agents and MultiAgent Systems (**AAMAS-2017**).
11. Akshat Kumar, **Arambam James Singh**, Pradeep Varakantham and Daniel Sheldon, *Robust Decision Making For Stochastic Network Design*. In proc. of AAAI Conference on Artificial Intelligence (**AAAI-2016**).
12. Poulami Dalapati, **Arambam James Singh** and Animesh Dutta, *Multi-Agent Based Algorithmic Approach for Fast Response in Railway Disaster Handling*. In proceedings of International Conference on Web Intelligence and Intelligent Agent Technology (**WI-IAT-2015**).
13. Poulami Dalapati, **Arambam James Singh**, Animesh Dutta and Swapan Bhattacharya, *Multiagent Based Railway Scheduling and Optimization*. In proceedings of Tencon-2014 IEEE Region 10 Conference, Oct 2014.
14. **Arambam James Singh**, Poulami Dalapati and Animesh Dutta. *Multi-Agent Based Dynamic Task Allocation*. In proceedings of International Conference on Agents and Multi-agent Systems – Technologies and Applications, June 2014.
15. **Arambam James Singh**, Deepanwita Das and Sruti Kumari. *A Swarm Based Area Partitioning Technique by Robots With Limited Capabilities and its Simulation*. In proceedings of Eighth International Conference on Communication Networks (ICCN-2014), July 2014.
16. **Arambam James Singh**, Sudipta Acharya and Animesh Dutta. *Agent Based Task Specific Team Formation for Effective Distributed Decision Making*. In proceedings of International Conference on EEE, Computer, Telecommunications and Information Technology (ECTI-CON), May 2013.

## AWARDS & HONORS

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- Dean's List - 2021, 2020, 2019 for research excellence at School of Computing & Information Systems, Singapore Management University (SMU).
- SMU Presidential Doctoral Fellowship - 2020, 2019 for outstanding academic research achievements.
- Selected for Global Young Scientists Summit 2020.
- Received Best Demonstration Paper Award in AAMAS-2021.
- Student Travel Scholarship to attend International Conference on Autonomous Agents and Multiagent Systems (AAMAS - 2019), at Montreal, Canada.
- Student Travel Scholarship to attend International Summer School on Planning and Scheduling, held in conjunction with ICAPS-2018, at Delft, The Netherlands.
- Fujitsu-SMU Ph.D Student Scholarship - 2017

- Institute Gold Medal in Master of Technology for securing first position in the Department of Information Technology, National Institute of Technology Durgapur, India.
- Scholarship from Ministry of Human Resource Development, Government of India, Fellowship 2012-2014 for pursuing M.Tech(Master).

## PROFESSIONAL SERVICES

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Reviewer, Journal of Artificial Intelligence Research (JAIR)	
Program Committee Member (Reviewer), IJCAI	2024, 2023, 2022
Program Committee Member (Reviewer), AAAI	2024, 2023, 2022, 2020
Program Committee Member (Reviewer), ICAPS	2024, 2023, 2022
Program Committee Member (Reviewer), ICRA	2022
Program Committee Member (Reviewer), IAAI	2022
Local Organizing Committee, AAMAS	2016