ARAMBAM JAMES SINGH

Assistant Professor, Yardi School of Artificial Intelligence
Indian Institute of Technology Delhi

EMPLOYMENT

Assistant Professor *Nov. 2024 - present*
Yardi School of Artificial Intelligence
Indian Institute of Technology (IIT) Delhi, India

Research Fellow *Jan. 2023 - Sep. 2024*
School of Computer Science & Engineering,
Nanyang Technological University (NTU), Singapore

Research Fellow *Sep. 2021 - Sep. 2022*
Department of Computer Science,
National University of Singapore (NUS)

Research Engineer *Nov. 2014 - Nov. 2016*
School of Computing & Information Systems
Singapore Management University (SMU)

Assistant Software Engineer *Aug. 2010 - July 2012*
Sopra Steria India Ltd.

RESEARCH INTEREST

Artificial Intelligence/Machine Learning:

- Reinforcement learning
- Multi-Agent Learning
- Large-Scale Multi-Agent Systems
- Human-AI Interaction

EDUCATION

Singapore Management University (SMU) *Jan. 2017 - Aug. 2021*
School of Computing & Information Systems
PhD in Computer Science

National Institute of Technology Durgapur, India *Aug. 2012 - June 2014*
Department of Information Technology,
Master of Technology in Information Security
(Gold Medalist)

National Institute of Technology Silchar, India *July 2006 - June 2010*
Department of Electronics & Communication Engineering,
Bachelor of Technology in Electronics & Comm. Engg.

PUBLICATIONS

1. Xinwei Gao, **Arambam James Singh**, S Royyuru, M Yuhas, A Easwaran. *CRLLK: Constrained Reinforcement Learning for Lane Keeping in Autonomous Driving (demonstration track)*. Accepted in International Conference on Autonomous Agents and MultiAgent Systems (**AAMAS-2025**)
2. **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**)
3. Jiajing 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**).
4. 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).
5. **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**).
6. **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**).
7. 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**)
8. **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**).
9. **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**).
10. **Arambam James Singh**, Akshat Kumar, *Graph Based Optimisation For Multiagent Cooperation*. In proceedings of International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-2019**).
11. **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**).
12. 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**).
13. 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**).
14. 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.
15. **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.
16. **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.

17. **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.

RESEARCH GRANTS

Prime Minister Early Career Research Grant (PMECRG) - INR 72 Lakhs *July 2026 - July 2029*
Anusandhan National Research Foundation (ANRF),
Government of India

New Faculty Seed Grant - INR 20 Lakhs *July 2025 - July 2028*
Industrial Research & Development, IIT Delhi

PROFESSIONAL SERVICES

Program Committee Member (Reviewer), ICLR	*2027*
Program Committee Member (Reviewer), AAAI	*2027 - 2020*
Program Committee Member (Reviewer), AAMAS	*2027 - 2025*
Reviewer, Journal of Artificial Intelligence Research (JAIR)	*2025 - 2024*
Program Committee Member (Reviewer), IJCAI	*2024 - 2022*
Program Committee Member (Reviewer), ICAPS	*2024 - 2022*
Program Committee Member (Reviewer), ICRA	*2022*
Program Committee Member (Reviewer), IAAI	*2022*
Local Oraganizing Committee, AAMAS	*2016*

AWARDS & HONORS

- Young Faculty Incentive Fellowship, IIT Delhi - 2024
- **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**.
- Recieved **Best Demonstration Paper Award** in AAMAS-2021.
- **Fujitsu-SMU** Ph.D Student Scholarship - (2017-2020)
- **Institute Gold Medal** in Master of Technology for securing first position in the Department of Information Technology, National Institute of Technology Durgapur, India.

TEACHING & MENTORSHIP

Indian Institute of Technology Delhi

- Course Instructor:

- Reinforcement Learning *AIL-7022, Fall 2026*
- Advanced Reinforcement Learning *AIL-8027, Fall 2025*
- Deep Learning *AIL-721, Spring 2025*

- Student Advisor at IIT Delhi:

- Aniruddh Kishore Budhgavi, PhD ScAI.
- Archit Bansal, MSR ScAI.
- Dhruva Bhardwaj, MTech Robotics EE, Minor Project.
- Kashish Srivastava, MTech ScAI - M.Tech Project (MTP)
- Saumitra Garg, BTech CSE - B.Tech Project (BTP)
- Anubhav Kar, BTech CSE - BTP
- Rishit Jhakaria, BTech CSE - BTP
- Abhishek Amrendra Kumar, BTech CSE - BTP
- Rohan Roy, BTech Math & Computing - BTP
- Raj Aryan, BTech Math & Computing - BTP
- Shamil Mohammed, BTech Math & Computing - BTP
- Sarthak Maheswari, BTech Math & Computing - BTP
- Sikhar Gupta, BTech Math & Computing - BTP

Singapore Management University (SMU)

- Teaching Assistant:

- Introduction to Artificial Intelligence *IS-448, Fall 2018*

Nanyang Technological University (NTU) & National University of Singapore (NUS)

- Student Advisor

- Royyure Gangadhar, Intern from IIT Madras, under India Connect@NTU Program.
- Prashant Mohit, PhD Student, NTU Singapore.
- Divyansh Sharma, Final Year Project, 4th Year Undergraduate Student, NTU Singapore
- Gao Xinwei, Research Associate, NTU Singapore.
- Bowen Zhang, PhD Student, NUS Singapore.