

PERSONAL
INFORMATION

Janaka Brahmanage

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RESEARCH
INTERESTS

Reinforcement Learning, Imitation Learning, Large Language Models, Constraint Satisfaction and Optimization, Functional Programming, Category Theory

EDUCATION

**School of Computing and Information Systems,
Singapore Management University, Singapore.**

Aug, 2022 - Present

PhD Candidate

- Supervisor: Prof. Akshat Kumar
- Research Topic: Constrained Reinforcement Learning, Imitation Learning

University of Moratuwa, Sri Lanka.

Jan, 2014 - Jan, 2018

B.Sc. Eng (Hons.) in Computer Science & Engineering

- Class: First Class
- Cumulative GPA: **3.99/4.2**
- Rank: **17th** (out of 125 Computer Science & Engineering graduates)
- Electives: Theory of Computing, Programming Languages, Intelligent Systems, Image Processing, Formal Methods in Software Engineering, Digital Photography, Advanced Algorithms, Concurrent Programming, Machine Learning, Data Mining & Information Retrieval, Distributed Systems, Compiler Design, Bioinformatics

Royal College, Colombo, Sri Lanka.

Jun, 2004 - Aug, 2012

General Certificate of Education Advanced Level in Physical Science stream (University Entrance)

- Rank: **42nd** (out of ~40,000)
- Rank: **5th** in Colombo district

EXPERIENCE

School of Computing and Information Systems

Singapore Management University, 81 Victoria Street, Singapore.

Nov, 2020 - July, 2022

Research Engineer

Develop algorithms for bus frequency optimization and perform data mining on Singapore's public transportation system.

Stack Technologies (Pvt) Ltd., 187 Ward Pl, Colombo 01, Sri Lanka.

Oct, 2019 - Nov, 2021

Co-founder / Software Engineer

Responsible for software design, development, and leading the development team.

Hybriteq Solutions (Pvt) Ltd., 430/5, Thaladena, Malambe, Sri Lanka.

Aug, 2018 - Oct, 2019

Co-founder / Software Engineer

Responsible for software design, development, and leading the development team.

WSO2 Inc., 20 Palm Grove, Colombo, Sri Lanka.

Aug-Dec, 2016

Engineering Intern

Successfully completed a software engineering internship of six months.

PUBLICATIONS

- 2026, **Brahmanage, J. C.**, Kumar, A. Beyond Hard Constraints: Budget-Conditioned Reachability For Safe Offline Reinforcement Learning. The Thirty-sixth International Conference on Automated Planning and Scheduling (ICAPS-2026). [\[pdf\]](#)
- 2025, Pham, Q. A., **Brahmanage, J. C.**, Mai, T. A., & Kumar, A. (2025, October 29). IOSTOM: Offline Imitation Learning from Observations via State Transition Occupancy Matching. The Thirty-ninth Annual Conference on Neural Information Processing Systems (NeurIPS-2025). [\[pdf\]](#)
- 2025, Pham, A.Q., **Brahmanage, J. C.**, Kumar, A. ShipNaviSim: Data-Driven Simulation for Real-World Maritime Navigation. The Twenty-Fourth International Conference on Autonomous Agents and Multiagent Systems (AAMAS-2025). [\[pdf\]](#)
- 2025, **Brahmanage, J. C.**, Ling, J., & Kumar, A. Leveraging Constraint Violation Signals For Action Constrained Reinforcement Learning. The Thirty-ninth Annual AAAI Conference on Artificial Intelligence(AAAI-2025). (**Oral**) [\[link\]](#)
- 2023, **Brahmanage, J. C.**, Ling, J., & Kumar, A. FlowPG: Action-constrained Policy Gradient with Normalizing Flows. Thirty-seventh Conference on Neural Information Processing Systems(NeurIPS-2023). [\[pdf\]](#)
- 2022, **Brahmanage, J.**, Kandappu, T., & Zheng, B. (2022). A data-driven approach for scheduling bus services subject to demand constraints. IEEE Transactions on Knowledge and Data Engineering (TKDE) [\[pdf\]](#)
- 2018, **Brahmanage, J.**, Ediriweera, S., Hasantha, R., Munasinghe, P., & Ranathunga, S. (2018). Annotating opinions and opinion targets in student course feedback. Proceedings of the Eleventh International Conference on Language Resources and Evaluation (LREC-2018). [\[pdf\]](#)
- 2017, **Brahmanage, J.**, Ediriweera, S., Munasinghe, P., Hasantha, R., & Ranathunga, S. (2017). Opinion target extraction for student course feedback. Proceedings of the 29th Conference on Computational Linguistics and Speech Processing (ROCLING-2017), 295–307. [\[pdf\]](#)
- 2023, **Brahmanage, J.**, Kandappu, T., & Zheng, B. (2023). MetroWatch: A predictive system to estimate travel attributes using smart card data. 2023 IEEE 39th International Conference on Data Engineering (ICDE-2023, Demo Paper), 3607–3610. [\[link\]](#)

PROJECTS

- Budget Conditioned Action Pruning** (*Research Project*) 2023/24
Singapore Management University
 Proposed pruning based on the remaining budget during Q-value learning for safe offline RL tasks.
- GFlow-RL** (*Research Project*) 2023/24
Singapore Management University
 Proposed the use of Generative Flow Networks to approximate Q-value distributions in high-dimensional action spaces for reinforcement learning.
- Action Constrained RL with Normalizing Flows** (*Research Project*) 2020/21
Singapore Management University
 Proposed an algorithm that can utilize generative models to safely explore state space in Reinforcement Learning.
- Travel time inference of MRT network** (*Research Project*) 2020/21
Singapore Management University
 Developed a solution to infer the travel time statistically within the MRT network using Automatic Fare Collection(AFC) data.

Automatic Summarization of Student Feedback (*Final Year Thesis Project*) 2017/18
University of Moratuwa.

Developed a methodology to summarize general text feedback. We developed a simple annotation scheme, a corpus, and a methodology to perform general feedback summarization.

MongoDB Support for Apache Tajo 2016

Google Summer of Code 2016 Contributor The project is to add a MongoDB storage plugin to tajo-storage.

OPEN SOURCE
CONTRIBUTIONS

React Native Floating Bubble (218+ stars)

[\[link\]](#)

Sinhala Unicode Converter (19+ stars)

[\[link\]](#)

Maritime Simulator: Data-Driven Maritime Navigation Simulation

[\[link\]](#)

ACADEMIC SERVICES

Reviewer: AAAI, NeurIPS, ICAPS, JAIR

Volunteer: GYSS 2026 (Liaison officer), SRSC 2025 (Moderator), IEEE CAI 2024 (Volunteer)

HONORS AND
AWARDS

- Presidential Doctoral Fellowship - AY2025/26
- School of Computing and Information Systems, Singapore Management University.

- Presidential Doctoral Fellowship - AY2024/25
- School of Computing and Information Systems, Singapore Management University.

- NASA International Space Apps 2018
- World Finalist (best five teams in the world) representing Sri Lanka.
- Out of 25000+ participants
- Mora Ventures 2.0 (2017)
- Winner.
- Our product 'Smart Bat' became 1st out of 50 startups from University of Moratuwa
- Hack The North 2017, Canada
- World Finalist - Out of 72 countries

- IEEEExtreme Programming Competition 9.0 - Oct 2015
- National Rank 4 · Global Rank 93

- Sri Lankan Astronomy and Astrophysics Olympiad Competition
- Silver Medal

- National School Software Competition
- Merit Award

- Robotics Competition Organized by Open University Sri Lanka 2015
- 2nd Place

FAMILIAR
PROGRAMMING
LANGUAGES AND
FRAMEWORKS

Python, C++, TypeScript, JavaScript, Haskell, Java, Pandas, NumPy, Scikit-learn, JAX, PyTorch, TensorFlow