

PERSONAL
INFORMATION

Janakax Brahmanage
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RESEARCH
INTERESTS

Safe Reinforcement Learning, Imitation Learning, Alternative Transformer Architectures, 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

General Certificate of Education Ordinary Level (Junior High School)
· Passed with High Distinctions 8 subjects (8 'A' s and 1 'B')

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, 2020*
Co-founder / Software Engineer
Responsible for software design, development, and leading the development team.

Hybriteq Solutions (Pvt) Ltd., 430/5, Thalahena, 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

- Full Papers** Pham, Q. A., **Brahmanage, J. C.**, Mai, T. A.,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). (**Accepted**)
- 2025, Pham, A.Q., **Brahmanage, J. C.**, Kumar, A. ShipNaviSim: Data-Driven Simulation for Real-World Maritime Navigation. The Twenty-Forth 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](#)]
- Demo Papers**
- 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), 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.

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

FAMILIAR PROGRAMMING LANGUAGES AND FRAMEWORKS

Python, C++, Type-Script, Java-Script, Haskell, Java, Pandas, NumPy, Scikit-learn, JAX, PyTorch, TensorFlow