AAKASH KRISHNA GS

Edmonton, AB, Open to Relocate,

(+1) 587-982-5825 — aakash3697@gmail.com — linkedin.com/in/aakash-sasikumar github.com/AakashSasikumar —
Personal Website: aakashsasikumar.com

EDUCATION

MSc (Thesis) in Computing Science   **Edmonton, Canada**
University of Alberta   *2021 to present*
- Specialization in Applied Reinforcement Learning

B. Tech. Computer Science   **Coimbatore, India**
Amrita School of Engineering   *2015 to 2019*
- Graduated **First Class with Distinction**
- Top **10%** of class

WORK EXPERIENCE

Graduate Research Assistant   **Edmonton, Alberta**
University of Alberta   *May 2022 - present*
- Helped develop a method to introduce diversity while training proximal policy optimization (PPO) agents to make them more general for transfer learning
- Developed an algorithm that applies zero cost proxies (ZCPs) in neural architecture search (NAS) for ranking reinforcement learning (RL) policies for offline transfer to novel environments
- Helped develop a novel two-stage algorithm that combines policy clustering and evaluation, and uses policy ranking via ZCPs to efficiently select high-quality policies from a larger policy library

Research Engineer, Data and Decision Sciences Group   **Bangalore, India**
TCS Research and Innovation   *July 2019 - Aug 2021*
- Built an Electric Vehicle (EV) user behavior and traffic simulator for Luxembourg City
- Developed Reinforcement Learning based pricing algorithms to manage demand-supply of EV Chargers
- Developed and integrated a parallel execution system to help speed up and automate the training process; Cutting execution times in half

Research Intern, Data and Decision Sciences Group   **Hyderabad, India**
TCS Research and Innovation   *January 2019 - July 2019*
- Implemented several cyber physical models for solar PhotoVoltaic (PV) cells
- Built a test suite for analyzing large scale solar PV behavior when faults are introduced
- This test suite helped generate data to validate existing, and develop new fault detection and classification algorithms

Software Development Intern   **Bangalore, India**
Thermo Fisher Scientific   *May 2018 - July 2018*
- Responsible for building an automation solution for the Thermo Scientific Spinnaker™ robotic arm
- Built a custom dataset and trained CNN based object detectors to help it identify specific locations on different Thermo Scientific instruments
- This robot removes the need for saving these locations manually, and automates the entire process for transporting hazardous chemicals from/to various biomedical instruments

PUBLICATIONS

[1] <u>Aakash Krishna GS</u>, Tianyu Zhang, Mohammad Afshari, Petr Musilek, Matthew E. Taylor, Omid Ardakanian. 2022. *"Mitigating an adoption barrier of reinforcement learning-based control strategies in buildings"*. In Energy and Buildings 2023, Vol 285. doi.org/10.1016/j.enbuild.2023.112878.

[2] Tianyu Zhang, <u>Aakash Krishna GS</u>, Mohammad Afshari, Petr Musilek, Matthew E. Taylor, Omid Ardakanian. 2022. *"Diversity for Transfer in Learning-based Control of Buildings"*. In Proceedings of the Thirteenth ACM International Conference on Future Energy Systems (e-Energy '22). doi.org/10.1145/3538637.3539615.

[3] Ajay Narayanan, <u>Aakash Krishna</u>, Prasant Misra, Arun Vasan and Venkatesh Sarangan. 2022. *"A Dynamic Pricing System for Electric Vehicle Charging Management Using Reinforcement Learning"*. In IEEE Intelligent Transportation Systems Magazine, doi: 10.1109/MITS.2022.3198019.

[4] <u>Aakash Krishna</u>, Ajay Narayanan, Sunil Krishnakumar, Prasant Misra, Arunchandar Vasan, Venkatesh Sarangan, and Anand Sivasubramaniam. 2020. *"Uberizing The Charging Ecosystem For Electric Vehicles"*. Proceedings Of The Eleventh ACM International Conference On Future Energy Systems. doi:10.1145/3396851.3397758.

[5] <u>Aakash Krishna GS</u>, Vijay Nirmal Pon, Saumya Rai, and A Baskar. 2020. *"Vision System With 3D Audio Feedback To Assist Navigation For Visually Impaired"*. Procedia Computer Science 167: 235-243. doi:10.1016/j.procs.2020.03.216.

PROJECTS

Freelance Project: Prostate Cancer Classification

Python, PyTorch, Image Processing, Whole Slide Image Classification, Medical Image Analysis   *Jan 2021 - Aug 2021*
- Developed a novel Multi-Stage approach for Prostate Cancer Classification for class imbalance
- This method achieves around 30% better performance when compared to a single neural network trained for classification
- Developed a REST API for users to access this model and deployed it on AWS Lambda
- Designed and developed a front-end user interface. (https://master.dtf8yl7z39jhy.amplifyapp.com/)

StockMate

Python, Tensorflow, Reinforcement Learning, AI   *June 2020 - Sep 2020*
- Built a python framework for creating stock price predictors and automated trading agents
- Implemented several ANN based predictors and various RL based trading bots using the framework
- Built a web UI for viewing agent decisions and or stock predictions
- Built a chatbot to let the user know of any job updates and or agent decisions

EXTRA CURRICULAR

Organizer of t{know} Club

Amrita School of Engineering   *2016 to 2018*
- Organized and conducted multiple events such as coding competitions, hackathons etc.
- Conducted seminars on various topics such as building chatbots, web-scraping etc.

Office Bearer of ASCII Club

Amrita School of Engineering   *2017*
- Helped organize and conduct events for our official coding club

ACCOLADES

- **Best Outgoing Student**, Suguna PIP School
- **Adarsh Vidyarthi** (Given to class toppers), Suguna PIP School

* clicking on the project name takes you to a website showcasing the work

* or visit the "projects" page on my personal website