Aditya Soni

MSc Student · University of Alberta · Edmonton, AB

adityasoni25@gmail.com · dasyud.github.io · Google Scholar · GitHub

Research Interests

I am interested in stability in reinforcement learning in two senses: stable *learning*, such as convergent off-policy temporal-difference methods, and stable *behaviour* once deployed, meaning learned policies that remain stable under disturbances and non-stationarity.

Education

University of Alberta — *Edmonton, AB*
Master of Science in Computing Science — Sep 2025 – Aug 2027 (expected)
Supervisor: Martha White
Research: Gradient temporal-difference methods
GPA: 4.0/4.0

Birla Institute of Technology and Science, Pilani — *Hyderabad, India*
Bachelor of Engineering in Electronics and Instrumentation — Aug 2019 – Jul 2023
CGPA: 8.16/10

Publications

Preprints

[P.1] **A. Soni**, M. Das, A. Parayil, S. Ghosh, S. Shandilya, C.-A. Cheng, V. Gopal, S. Khairy, G. Mittag, Y. Hosseinkashi, and C. Bansal. Streetwise Agents: Empowering Offline RL Policies to Outsmart Exogenous Stochastic Disturbances in RTC. *Preprint*, 2024. [arXiv]

Workshop Papers

[W.1] **A. Soni**, M. Das, P. Misra, and C. Bansal. Intelligent Overclocking for Improved Cloud Efficiency. *Cloud Intelligence / AIOps Workshop, ASPLOS*, 2024. [Paper]

Experience

Microsoft Research — *Bangalore, India*
Research Fellow — Jul 2023 – Jun 2025
Mentors: Mayukh Das, Ching-An Cheng

- **Offline RL for Robust Bandwidth Estimation in RTC.** Designed and implemented a post-deployment policy shaping algorithm that makes offline RL policies robust to non-stationarity, improving video quality (MOS) by ∼15% over IQL on lossy network profiles in emulated calls [P.1]. Piloted as a bandwidth estimator on internal Microsoft Teams test devices.
- **Intelligent Overclocking in Azure Datacenters.** Designed power-aware policies for scheduling CPU overclocking requests, reducing power-capping events by up to 100× over naive overclocking on production datacenter traces [W.1].

Research Intern Jan 2023 – Jun 2023

Mentors: Mayukh Das, Alok Gautam Kumbhare, Pulkit Misra

- **Tuning Server Parameters for Workload Performance and Sustainability.** Trained an RL agent to configure CPU power-management settings, including sleep states, on Intel and AMD servers, reducing power consumption by 11.3% with no loss in workload latency or throughput.

Teaching

University of Alberta, Edmonton, AB

Teaching Assistant Machine Learning II (CMPUT 467/567) *Winter 2026*

Service and Outreach

Reviewer: ICLR 2027, RLC 2026

Open-source contributor: PyTorch (ONNX export functionality)

Skills

Programming: Python, JAX, PyTorch, Java, C