Subhadeep Chatterjee

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Education

University of California — San Diego, CA
Masters of Science in Electrical and Computer Engineering — *Sep. 2023 – May 2025*

Indian Institute of Technology — Ropar, India
Bachelors of Technology in Electrical Engineering — *Jul. 2019 – Mar 2023*

Experience

Graduate Research Assistant — Apr 2024 – Present
University of California — *San Diego, CA*

- Working under Prof. Nikolay Atanasov.
- Working on Reinforcement learning on reward functions for navigation + manipulation task
- Working on local object avoidance using depth image data and RGB data.
- Working on arm robot for grasping objects, trained using SAC.
- Using Mujoco simulator for implementing a learning pipeline
- Mainly working on SAC and PPO, future implementation of multi agent RL using GNN

Graduate Research Assistant — Jan. 2024 – May 2024
University of California — *San Diego, CA*

- Worked on BMI(Brain Machine Interface) under Prof. Gert Cauwenberghs
- Implemented a machine learning pipeline to analyse time series brain data.
- Used the machine learning pipeline to classify intention detection.

Graduate Research Assistant — Oct 2024 – Present
University of California — *San Diego, CA*

- Working under Prof. Sonia Martinez
- Making a code consolidation LLM
- Making a chatbot based on state of the art LLM architecture to use an already present codebase
- Exploring RAG, and fine tuning methods
- LLM will be used to play around with robotics frameworks codebase
- Working on making a fully functional code assistant for a given robotics codebase to increase productivity and increase the rate of development

Projects

Neural Network from Scratch | *C, Assembly, Math*

- Completely made a matrix multiplication library, and function library from scratch
- Carried out all the memory management from scratch and optimized memory usage for large data
- All the math is done by hand and adapted to code using C
- Is currently being adapted to CNNs

GPI for Continuous action space | *Python*

- Made an algorithm to autnomously navigate a car in a specified environment
- Used General Policy iteration algorithm for this purpose
- Divided the coninuous environment into discrete environment space and same for the action space
- Used Ray.io for parallelization as the spaces we are dealing with is extremely high

Technical Skills

Languages: C. Assembly, Python
Developer Tools: Git, Docker, Emacs, Vim
Libraries: StableBaselines, NumPy, Matplotlib