K S Mohan Kumar

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Education

Indian Institute of Technology, Madras **Aug. 2019 – May 2024**
B. Tech in Mechanical Engineering and M.Tech in Data Science *CGPA : 9.17/10*

Experience

Oracle Corporation (OCI Generative AI Services) **July 2024 – Present**
Member of Technical Staff *Bangalore, Karnataka*

- Enabled the delivery of Oracle's Generative AI services by developing critical components for infrastructure management, service orchestration, and efficient model serving of LLMs for different regions. Led DevOps activities to ensure high availability and reliability.
- Built core features for an internal SaaS application leveraging Open WebUI, owning key components such as canary, load testing, file extraction and client-side monitoring to improve performance visibility and system resilience.

Centre for Responsible AI, IIT Madras **May 2024 – Sept 2024**
Research Intern *Remote*

- Conducted a comprehensive literature survey on explainable reinforcement learning (XRL) methodologies specifically for trajectory analysis in complex environments.
- Leveraged Inverse Reinforcement Learning (IRL) to derive underlying reward functions from expert trajectories, enabling effective ranking and comparison of different behavioral strategies

Other Internship Highlights **May 2022 – Apr 2024**
Oracle Corporation, Axis Bank, Forbes Marshall,Cogniquest AI

- Gained cross-functional internship experience at spanning software engineering, data analytics, business analysis, and computer vision. Contributed to key projects involving automation, predictive modeling, OpenAPI development, dashboarding, and object detection.

Projects

Pioneering Analytical and Solution Strategies for the Flatland Challenge | *Dual Degree Project*

- Evaluating a range of benchmark Multi-Agent Reinforcement Learning (MARL) algorithms like MA-PPO, MAMBA to identify optimal strategies for tackling the Flatland Challenge, aiming to set new performance standards.
- Designed and implemented feature extraction techniques (global state, local tree-based views) and reward functions (including shaping) to facilitate effective learning

Other Critical Projects | *Reinforcement Learning, Computer Vision*

- Demonstrated deep interest and expertise in Reinforcement Learning by designing and implementing advanced algorithms such as Lin-UCB, KL-UCB, Q-Learning, SARSA, DQN, Actor-Critic, and TD3 across applications including game simulations, robotics, and control environments.Built a robust simulation framework for Multinomial Logit Bandits using the AT-DUCB algorithm.
- Pursued diverse machine learning projects such as LSTM-based music generation, surface roughness prediction using Mask R-CNN and GLCM, and humanoid locomotion in pybullet environments, reflecting versatility and applied problem-solving skills in AI and vision.

Technical Skills and Courses

Languages: Python, Java, JavaScript, SQL
Technologies/Frameworks: Linux, Jenkins, GitHub, JUnit, Docker, Kubernetes, Terraform, SvelteKit
Courses: Pattern Recognition and Machine Learning, Mathematical Foundations of Data Science, Reinforcement Learning, Multi-Armed Bandits, Big Data Laboratory, Probability, Statistics and Stochastic Process, Non Linear Optimization, Applied Statistics

Scholastic/Extracurricular Achievements

- Selected as one of the Top 6 candidates in RMO (2018) to take the INMO (2019) exam in Tamil Nadu.
- Ranked among the top 5% of graduating students in my department.
- Highly accomplished powerlifter, achieving a 2nd place ranking in institutional competitions.