Nandagopan K

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EDUCATION

University of calicut Jun 2019 – Apr 2022

B.com Finance

- Collaborated with cross-functional teams from various college departments to effectively
- Presented an article on "The impact of covid-19 on the banking sector".
- Worked on a graduation project and executed project strategy.

PROFESSIONAL EXPERIENCE

IIT Palakkad Mar 2024 – present

Project Engineer Palakkad, Kerala

Project: Reinforcement learning-based control algorithms on dynamical systems/ on a network of systems, simulations, and experimental validations.

- Implementation of reinforcement learning algorithms in hardware using **MATLAB** and **Simulink.**
- Implementation and testing of latest neural network architecture (**KAN**) and developing it's variants.
- Migration of **MLP** based neural networks to **KAN**.

Indian Institue of Technology Palakkad (Ihub) Jun 2023 – Mar 2024

Project Engineer Palakkad, Kerala

Project: Reinforcement learning-based control algorithms on dynamical systems/ on a network of systems, simulations, and experimental validations.

- Improving and Implementing **Deep Reinforcement Learning** algorithms in Gazebo-simulated environments using **PyTorch** and **ROS**.
- Implementation of optimal control algorithms in hardware.
- Migration of **ROS 1** code to **ROS 2.**

Luminar Technolab Nov 2022 – May 2023

Data science Trainee (Internship) Kochi, Kerala

- Collecting, cleaning, and preprocessing data.
- Exploring and analysing data using statistical methods and tools.
- Building predictive models and algorithms to solve specific business problems.
- Communicating insights and results to stakeholders through visualisations, presentations, and reports.
- Statistical analysis, quantitative analytics, forecasting/predictive analytics.

SKILLS

- Machine Learning
- Deep Learning
- Python
- Matlab
- PyTorch
- NLP
- Huggingface
- ROS
- Gazebo
- Linux
- Tableau
- SQL
- Flask
- Version control (Git)

PROJECTS

Mobile Robot Auto-Navigation

Deep reinforcement learning algorithms were implemented on a **turtlebot3** for **autonomous navigation and obstacle avoidance.**
Gazebo/ROS

LQR Control on Two wheeled self balancing robot

An **Linear Quadratic Regulation (LQR**) controller was implemented to stabilize a self balancing robot. It was implemented in a simulated environment(**Gazebo)** and **ROS** was used to communicate with the robot.

Deep Reinforcement Learning for Control Systems

- Implemented state-of-the-art (**SOTA**) **Deep Reinforcement Learning** algorithms in the Gymnasium Classic Control environment and 3D environments.
- Bench-marking the results.

Review Sentiment Analysis

This is an Amazon review sentiment analysis web app that is built using the **Streamlit** framework and the **VADER** (Valence Aware Dictionary and sEntiment Reasoner) model.Once the text has been analyzed, the application outputs the sentiment of the review as either positive, negative, or neutral.

SpamClass

This **Flask**-based web app uses **NLP** techniques and a pre-trained Naive-Bayes model to classify messages as spam or non-spam.