

PRAJWAL BINDU VINOD

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Profile

Post graduate degree in Systems and Control with a background in Mechatronics. Master's thesis focused on application of Soft Actor Critic RL algorithm in freeway traffic control scenarios. Experience with Python in Reinforcement Learning and AI, along with MATLAB in scientific computing. Creative, diligent and goal oriented approach while being able to handle tasks independently or work in a team as required. Proficient in creating reports and presentations of scientific nature. Always eager to learn with knowledge augmented with various online courses and certifications.

Education

SRM Institute of Science and Technology

Jul. 2015 – May 2019

Bachelor of Technology in Mechatronics Engineering

Chennai, Tamil Nadu

Delft University of Technology

Sep. 2020 – Jun. 2025

Master of Science in Systems and Control

Delft, Netherlands

- Given a thesis topic on using reinforcement learning in freeway traffic control by the supervisor
- Used a previously unknown software (SUMO) to set up the environment and Python to code RL algorithms as instructed.
- Researched and coded all components of the thesis without any prior input from the supervisor and interfaced the two software to run simulations
- Took 2 additional years and multiple meetings to get approval from the supervisor to present the results of the thesis
- Additionally struggled with one compulsory subject(now relegated to an elective)

Relevant Coursework

- | | | | |
|----------------------------|-----------------------|------------------------|----------------------------|
| • Control Theory | • Dynamic Programming | • Fault Diagnosis and | Systems |
| • Nonlinear Systems Theory | • Optimization | Fault Tolerant Control | • Model Predictive Control |
| | • Digital Control | • Knowledge Based | |

Experience

JSW Steel Pvt. Ltd.

June 2018 – July 2018

Student Worker

Toranagallu, Karnataka

- Trainee observer in the Hot Strip Mill -1 at the Jindal Steel plant.
- Observed and reported on the steel milling processes in the mill in 4 different control rooms along the HSM - 1 line.
- Submitted a report with observations along with two teammates.
- Also listed some drawbacks and improvements to increase efficiency of plant.

Festo B.V.

July 2021 – August 2021

Market and Technology Development Management Intern

Delft, Netherlands

- Intern working with a team for the development of proportional pressure valve (control performance, programming, electronics) and qualification.
- Fabricated control circuitry for valve application by hand and conducted pressure testing for application specific use.
- Laid the groundwork for integration of valve control using STM32 Micro-controller.
- Submitted a report on the progress of the project along with recommendations for further work.

Projects

Pneumatic Sheet Bending Machine | Festo Hardwar

March 2017

- Developed an automatic metal sheet bending machine using Festo pneumatic hardware as part of a small social project during bachelors.
- Efficient at bending small to medium sized sheets of metal of 1-5 mm thickness for small-scale use.

Flapping Wing Drone | GoLang

May 2019

- Fabricated a low cost flapping wing mechanism drone with object detection capability to mirror bird flight.
- Built using few 3D printed parts, thermocol, and thick cellophane sheets to accommodate the weight of electronic hardware
- Utilized pre-existing GoLang code to achieve object detection with a suitable camera module.

- Designed a complete quadcopter drone from scratch including selection of materials, payload definitions and hardware selection, as part of a capstone project for an online 3D modelling Course.
- Used AutoDesk Fusion 360 for all modelling tasks including simulations of loads and forces on the design to check for tolerances based on the design proposal submitted.

Technical Skills

Languages: Python, MATLAB, Simulink, R, AutoDesk Fusion360

Developer Tools: VS Code, PyCharm, Jupyter

Technologies/Frameworks: GitHub, WordPress, TensorFlow, PyTorch, Keras, SUMO

Online Courses

Introduction to Systems Engineering

UNSW, Australia

Mar. 2018

Systems Engineering

CAD and Digital Manufacturing Specialization

AutoDesk

Sep. 2019

5 Course Specialization - CAD and DM

Machine Learning Specialization

DeepLearning.ai, Stanford University

Jan. 2025

3 Course Specialization - Machine Learning

Deep Learning Specialization

DeepLearning.ai, Stanford University

Feb. 2025 - Mar. 2025

5 Course Specialization - Deep Learning

Tensorflow Developer Specialization

DeepLearning.ai

Mar. 2025

4 Course Specialization - Tensorflow Developer

IBM AI Engineering Professional Certificate

IBM

May 2025

13 Course Specialization - IBM AI Engineering