Amikosh Dube

A junior in Computer Engineering focusing mainly on Control Systems, Machine Learning, and Automation. My ambition is to utilize the skills learned from my previous experiences and education to work on the breaking-edge technology of autonomy in robotics, space exploration, and unmanned systems.

Link to portfolio

github.com/AviDube
avidube.github.io
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(678) 833-8700

EDUCATION

Purdue University
Bachelor of Science in Computer Engineering
August 2021 - Present

- Gpa - 3.42 / 4.0
- Spring 2022 Deans List

SKILLS

Programming Languages
- C++, C, Python
  - Airsim, SWARMS, and Robotics
- Docker
  - Building and deploying containers for a variety of projects
- Octave
  - Machine learning model development

Control Algorithms
- PID, LQR and Motion Profiling
  - Drone swarms and robot controllers

Software Tools
- Github, Gitlab, and Git
  - Source Control
- Unreal Engine
  - Scenario Creation
- MobaXterm
  - VIM for remote development

Team Collaboration
- JIRA and Confulence
- Stand Up / Sprints

CERTIFICATIONS

Machine Learning
Andrew Ng / Stanford
August 2021

Programming in Python
Purdue University
January 2022

EXPERIENCE

Remote Machine Learning SWE | SAAB
May 2023 - August 2023

- Developed a simulated environment using the open-source library Stone-Soup to gather data to test UVA tracking algorithms
- Built a sensor fusion model for an acoustic sensor model utilizing linear algebra to build a library of sensors to gather test data to asses sensor fusion models
- Utilized Docker and Kafka brokers to help build a communication system for the machine learning model and sensor to communicate seamlessly
- Coded a program to scrape weather API and store the received data on a server to be later accessed using SQL
- Collaborated with team members to develop a machine learning model that utilizes weather data to improve plane ETA's
- Actively participated in virtual code reviews and pair programming sessions to ensure code quality and knowledge sharing.

Drone Swarms Research | Purdue University
Aug 2021 - Present

- Developing an easy-to-use, scalable, web-based multi-agent drone simulation platform
- Allows rapid prototyping and testing of drone swarm algorithms in complex and diverse scenarios
- Collaborated on Obstacle Avoidance algorithms utilizing sensors such as LiDAR, Distance Sensors, and Cameras to help detect potential obstacles in the drone's path
- Successfully implemented obstacle avoidance algorithim in the simulation allowing for drones to avoid hills, blocks, and humans
- Designed different control systems to efficiently control the drone and minimize error / jerk when performing movements

Active Control PSP | Purdue Club
September 2021 - Present

- Working on becoming the first university to have a student-led team land a reusable rocket
- Utilized MATLAB / Simulink to create a 6DOF system to test rocket control systems in a simulated environment
- Helped design / explain Github and Source Control to teammates

LEADERSHIP

Lead Researcher | Purdue University
August 2022 - Present

- Publishing a research paper to share a new obstacle avoidance algorithm
- Secured $1,000,000 in funding from investors
- Leading the Drone SWARM research team working with our professor to conduct meetings and assign tasks to students
- Redesigned the meeting structure and subteam meetings to make it inclusive; have peers ask questions and provide code examples as practiced in the workforce