

Amikosh Dube

678-833-8700 | dubea@purdue.edu | [avidube.github.io](https://github.com/avidube) | github.com/AviDube | [linkedin/amikoshdube/](https://linkedin.com/amikoshdube/)

Introduction

Tech innovator at the intersection of robotics, machine learning, and entrepreneurship. Founded a cloud simulation platform used by research institutions, developed advanced AI vision systems, and led drone swarm research. Passionate about transforming complex technological challenges into scalable, real-world solutions.

Education

Purdue University

West Lafayette, IN

Bachelor of Science in Computer Engineering

May 2025

- GPA 3.47
- Relevant Coursework: Data Structures & Algorithms (C), OOP (C++), Data Science (Python), Microprocessor Systems, Intro to Robotic Systems, Computer Networks, Intro to AI

Experience

Machine Learning Software Engineering Intern

May 2024 – August 2024

SAAB

Remote

- Developed a robust **camera vision** system for tracking objects and providing real-time location data
- Designed an automated image pipeline that builds bounding boxes around objects of interest to improve the **YOLO model** training process
- Implemented **camera calibration** pipeline in Unreal Engine to enhance the accuracy of synthetic data collection
- Created photo-realistic environments in Unreal Engine for **AI-based object detection**
- Led cross-functional team meetings with university research collaborators to drive innovation

Founding Technical Lead

August 2021 – Present

Codex Labs LLC [Startup]

Link to website: swarmsim.io

- Spearheaded the development of **SWARM**, a cloud-based simulation platform for autonomous flight control, utilized by **MIT Lincoln Laboratory, Alarm.com, and researchers**
- Designed an intuitive API and a motion planning library, reducing the barrier to entry for autonomous system development
- Led customer outreach, product demonstrations, and strategic development to expand the platform's adoption
- Contacted potential customers and conducted brief pitches to demonstrate the capabilities of our platform

Machine Learning Software Engineering Intern

May 2023 – August 2023

SAAB

Remote

- Developed a **sensor fusion model** integrating acoustic sensors and machine learning to enhance UAV tracking
- Utilized **Docker** and **Kafka brokers** to improve data pipeline efficiency and communication between systems
- Engineered a weather data API for aircraft ETA predictions using **SQL-based data retrieval**
- Collaborated with the team to create a machine-learning model leveraging weather data to improve aircraft ETA predictions
- Engaged in virtual code review sessions and actively contributed to code quality enhancement and discussions

Drone Swarms Research

August 2021 – Present

Purdue University

West Lafayette, IN

- Designed **SLAM algorithms** for autonomous drone navigation in complex environments
- Implemented **real-time obstacle avoidance** using LiDAR, distance sensors, and vision-based detection
- Engineered control systems to optimize drone performance, minimizing error and jerk during complex maneuvers
- Presented research at **Purdue's Undergraduate Research Expo** annually, advancing knowledge in robotic swarm control

Founder & Developer

January 2025 – Present

Purdue Student Ticket Exchange

West Lafayette, IN

- Created and managed a custom Discord server with **over 400 members**, providing a secure and efficient platform for Purdue students to buy and sell student section tickets
- Designed and implemented custom Discord bot commands to **automate** user verification and enhance **security**, ensuring that only Purdue students have access
- Concentrated on **user experience** by incorporating well-organized channels, intuitive navigation, and branding to boost engagement and usability

Leadership & Mentorship

Lead Researcher | Purdue University

August 2021 – Present

- Leading the drone SWARM research team in collaboration with our professor to conduct meetings and assign tasks to students
- Redesigned the meeting structure and sub-team discussions to foster inclusivity; encouraged peers to ask questions and share code examples as practiced in the workforce

High School Robotics Mentor | Remote

August 2021 – Present

- Guided several high school robotics teams, assisting them in achieving world championship placements and promoting interest in STEM
- Contributed to mentoring and collaboration efforts, highlighting the importance of inclusivity in engineering

Data Structures TA | Purdue University

January 2025 – Present

- Led office hours and mentoring students to improve their understanding of fundamental data structures and algorithms in C

Skills

Programming Languages: C/C++, Python, SQL

Frameworks: Docker, ROS2, Unreal Engine

Developer Tools: Git, Github, Gitlab, VS Code, Visual Studio, PyCharm, MobaXterm

AI & Robotics: PID, LQR, Motion Profiling, SLAM, YOLO, Sensor Fusion

Team Collaboration: Scrum, JIRA, Confluence

Certifications: Machine Learning with Andrew Ng / Stanford, Programming in Python with Purdue University