

ROHIT BERNARD

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A Computer Science graduate student with a passion for programming robots, drones, and vehicles to operate autonomously using techniques like Reinforcement Learning, Computer Vision, and Deep Learning. Helping develop safer and more efficient mobility solutions for tomorrow.

EXPERIENCE

Graduate Student Researcher

CPS-VIDA Group, University of Southern California

Advisor: Jyotirmoy V. Deshmukh

Los Angeles, CA

June 2022-Present

- Train and integrate a deep neural network to perform monocular 3D object detection for a perception system.
- Create a RL testing platform by integrating autonomous driving software with the Carla simulator.

SDE Intern - Mobile

Practo

Bengaluru, India

March 2021–July 2021

- Worked in Practo's mobile team as an iOS application developer.
- Implemented new user flows, built new features, made app improvements, and fixed bugs.
- Learned how to create and maintain iOS applications in Swift and gained valuable experience collaborating with a team.

Backend Developer Intern

Mezzlink Systems Pvt. Ltd.

Bengaluru, India

June 2018–August 2018

- Developed API's with Express.JS, a Node.JS Framework
- Worked with MySQL Databases, and REST APIs to process and store data from a ML model.

EDUCATION

University of Southern California

Master of Science, Computer Science

Los Angeles, CA

August 2021–May 2023

Relevant Coursework: Advanced Computer Vision, Analysis of Algorithms, Autonomous Cyber-Physical Systems, Foundations of Artificial Intelligence, Applied Natural Language Processing, Holodecks

GPA: 3.78

Dayananda Sagar College of Engineering

Bachelor of Engineering, Computer Science

Los Angeles, CA

August 2017–June 2021

Relevant Coursework: Data Structures, Object Oriented Programming, Machine Learning, Artificial Intelligence and Agent Technology, Internet of Things, Computer Networks

GPA: 9.45/10

SKILLS

- Programming Languages: Fluent in C, Java, Python, MySQL, Conversational in JavaScript, C++, Swift, Basic in Dart, Objective-C
- Technical Skills: Git, Android, iOS, OpenCV, Keras, Tensorflow, PyTorch, OpenAI Gym, Stable-Baselines, Node.JS, Express, Arduino, Carla, Working knowledge of: Flask, Flutter, ROS, MATLAB, Simulink, Jira, Docker, Transformers
- Soft Skills: Quick Learner, Adaptable, Team Player, Problem-Solving Attitude
- Interests: Autonomous Vehicles, Artificial Intelligence, Robotics, Reinforcement Learning, Computer Vision, Aviation, Algorithms

ACADEMIC PROJECTS

Gesture Controlled Swarm

2nd year MS, 2022

- An individual project utilizing miniature drones to render a simple 3D point cloud which can be controlled and manipulated by a user's hand gestures. Rendered object follows movements of user's arm. Can be activated and deactivated using a gesture.
- Built upon USC ACT lab's Crazyswarm consisting of a Python API to track and command a swarm of Crazyflie 2.0 drones.

Mapping Fires using a Drone Swarm

1st year MS, 2021

- Developed a path planning policy for a drone swarm to efficiently locate and dynamically map the boundary of a fire.
- Designed a grid-world environment in Python that models a spreading fire, and a variable number of drones.

Posture Coach

Senior year UG, 2020 - 2021

- Developed a cross platform mobile application using Flutter, to track and correct a user's exercise posture in real time.
- Determined the correctness of a user's posture during exercise using timed automata over a set of body key-points obtained by fine-tuning a Pose Estimation model called PoseNet.

Bluetooth Controlled Quadcopter

Junior year UG, 2019

- Programmed and assembled a quadcopter to be controlled remotely via Bluetooth, from a smartphone.
- An Arduino Microcontroller runs flight control systems, communication, and signal timing.