ROHIT BERNARD

Los Angeles, CA | (213) 551-4359
bernard.rohit@gmail.com | rohitbernard.github.io | linkedin.com/in/rohit-bernard | github.com/RohitBernard

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

AI Research Intern – Safety and Verification of Intelligent Systems Princeton, NJ
Siemens June 2023-Present

- Design and build a perception system to track objects in a warehouse setting using a single monocular camera.
- Communicate with other localization systems using ROS to identify inconsistencies in position estimates and detect failures.

Graduate Student Researcher Los Angeles, CA
CPS-VIDA Group, University of Southern California June 2022-May 2023
Advisor: *Jyotirmoy V. Deshmukh*

- 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 Bengaluru, India
Practo 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.

EDUCATION

University of Southern California Los Angeles, CA
Master of Science, Computer Science August 2021–May 2023
Relevant Coursework: Advanced Computer Vision, Analysis of Algorithms, Autonomous Cyber-Physical Systems, Deep Learning, Foundations of Artificial Intelligence, Applied Natural Language Processing, Holodecks **GPA: 3.78**

Dayananda Sagar College of Engineering Los Angeles, CA
Bachelor of Engineering, Computer Science 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.zz