



ANUSH SRIRAM RAMESH

857-693-9305 | Newark, CA | ramesh.anu@northeastern.edu | [LinkedIn](#)

EDUCATION

Master of Science in Robotics, *Northeastern University*

Boston, MA

Courses: Mobile Robotics, Machine Learning, Deep Learning, Computer Vision

3.94/4.0 | May 2024

Bachelor of Engineering in Robotics and Automation, *PSG College of Technology*

Coimbatore, India

Courses: Vision Systems, Robot Kinematics and Dynamics, Autonomous Driving project

8.5/10 | May 2019

SKILLS

Programming Languages: C++, Python, C

SLAM and Computer Vision: ROS, GTSAM, OpenCV, Boost, FBoW, Deep Learning, PyTorch

Organizational: SharePoint, Git, LATEX

EXPERIENCE

EMBEDDED TEST ENGINEER II

Newark, CA

Lucid Motors – C++, Python

Jul 2024 - Current

- Developed software test suites for Bootloader and Diagnostics testing of AUTOSAR platform software
- Architected Diagnostic test suite from scratch and improved time-efficiency of existing bootloader test cases

RESEARCH ASSISTANT

Boston, MA

Northeastern University – C++ (16 months)

Jan 2023 – Apr 2024

- Improved efficiency of multi-camera (3) GVIO SLAM system, for Fast autonomous mapping and localization in race-track, by introducing a streamlined approach to solve Bundle adjustment (Toyota Research Institute)
- Implemented smart projection factors with elimination schemes for pose-graph optimization in diverse conditions
- Implemented a Fast-Bag-of-Words-based visual place recognition module, for long-term data association and loop detection in a multi-camera GVIO setting
- Implemented Fast Global Re-localization and tracking module using KD-Trees against non-semantic 3D map points with IMU motion model, optimizing pose-graph with Fixed Lag Smoothing for real-time performance
- Inculcated good coding guidelines into the project and solved several implementation issues in C++

EMBEDDED SOFTWARE DEVELOPER INTERN

Newark, CA

Lucid Motors – C, Python (10 weeks)

May 2023 - Aug 2023

- Developed a fully automated static memory analysis tool to graphically visualize per-core, per-component memory usage of Tri-Core platform ECUs
- Enabled robust AUTOSAR build configuration for in-house platform ECUs by adding automated configuration checks in Python

SENIOR EMBEDDED SOFTWARE DEVELOPER

Coimbatore, India

Bosch Global Software Technologies – C++, C, Python (3 years)

Jun 2019 - Mar 2022

- Developed and supported customer-facing software in C and C++ for accessing Ethernet, Bluetooth, and Wi-Fi modules in QNX RTOS, Android, and AUTOSAR domains, through CAN bus with multi-threading for efficient performance
- Developed IPC communication between vendor diagnostics processes and child processes on QNX and INC communication between parent diagnostic process on AUTOSAR to Vendor Diagnostic process on QNX, to communicate CAN Diagnostic Request
- Automated Smoke/Release tests with CAPL and Python scripts to run 200+ test cases sourced from development teams, ensuring safe crash-free deployment
- Automated L1 and L2 testing, with RTFW and Python test scripts, to meet ASPICE software standards, for continuous integration of Jenkins nightly and hourly builds improving efficiency by 400%
- Implemented MISRA Coding guidelines by performing static code analysis using COVERITY and maintained > 95% Unit test code coverage

ROBOTICS INTERN

Coimbatore, India

Bosch Global Software Technologies – Python, Embedded C, C++ (6 months)

Dec 2018 - May 2019

- Developed hardware and software for hard lamps to indicate build status in continuous integration interfaced with Jenkins
- Automated robot teaching for ESD testing in automotive ECUs by locating the pins in the connector using OpenCV in Python
- Automated robot calibration procedure for regressive touch screen testing used in automobile multimedia systems
- Improved the time efficiency of the robot calibration process by 500%

PROJECTS

SLAM and April Tags detection and Pose Estimation using TurtleBot - Python

Nov 2022 – Dec 2022

- Collaborated with a team of 4 to develop software for TurtleBot3 (Raspberry Pi + OpenCR) to search for and locate victims in previously unmapped terrain/buildings

- Implemented robust april tag pose estimation with GTSAM library for optimization on Euclidean manifold
- Implemented SLAM and environment exploration based on the camera's field of view to map the environment whilst looking for April Tags
- Achieved result of detecting 13/15 April tags placed at various heights and orientations in the environment

Predicting Alphabet using RGB images of American Sign Language - *Python*

Oct 2022 - Dec 2022

- Performed exploratory data analysis, on the American Sign Language dataset, to classify a given image into one of 29 output classes by identifying patterns to create ML rules for prediction
- Implemented CNN using PyTorch with 2 fully connected layers to classify test data with an accuracy of 99.89% accuracy