



ANUSH SRIRAM RAMESH

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EXPERIENCE

RESEARCH ASSISTANT

Northeastern University - NEURAL – C++ (16 months)

Boston, MA
Jan 2023 – Apr 2024

- **Developed a real-time, multi-camera visual perception system in C++**, generating robust geometric and feature-based constraints for large-scale 3D scene understanding from video streams.
- **Engineered a high-performance optimization back-end using C++ and GTSAM**, creating a sparse factor graph to efficiently refine 3D maps and camera poses, demonstrating mastery of data structures and system architecture.
- **Applied traditional computer vision algorithms for robust, long-term place recognition**, integrating a Bag-of-Words (BoW) module to handle challenging data association and object re-identification in dynamic environments with significant appearance changes.
- **Validated system robustness through rigorous real-world testing**, achieving successful object tracking and scene recognition across diverse conditions, including drastic time-of-day lighting changes and different camera hardware.

EMBEDDED SOFTWARE DEVELOPER II

Lucid Motors – CAPL, Python

Newark, CA
Jul 2024 - Current

- Designed comprehensive test specifications and automated CAPL test frameworks for validating L4 ECU features, building modular Python-based software tools for efficient data analysis and reporting across multiple programs.
- Defined and optimized end-to-end test strategies, triaged critical issues, and collaborated with engineering teams to resolve and validate design improvements for advanced automotive systems

SENIOR EMBEDDED SOFTWARE DEVELOPER

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

Coimbatore, India
Jun 2019 - Mar 2022

- **Wrote clean, modular C/C++ software for production systems**, developing customer-facing features for Ethernet, Bluetooth, and Wi-Fi modules on QNX RTOS, Android, and AUTOSAR platforms, leveraging multithreading for high performance.
- **Ensured high software quality and reliability by enforcing MISRA standards** using static analysis tools (COVERITY), maintaining over 95% unit test coverage, and building automated testing pipelines with Python to boost CI efficiency by 400%.

EMBEDDED SOFTWARE DEVELOPER INTERN

Lucid Motors – C, Python (10 weeks)

Newark, CA
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

ROBOTICS INTERN

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

Coimbatore, India
Dec 2018 - May 2019

- **Utilized traditional computer vision algorithms with OpenCV and Python** to automate robotic calibration by successfully identifying and locating connector pins in complex hardware for automated testing procedures.

EDUCATION

Master of Science in Robotics, Northeastern University

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

Boston, MA
3.94/4.0 | May 2024

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

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

Coimbatore, India
8.5/10 | May 2019

SKILLS

Programming Languages: C++, Python, C

Computer Vision & Deep Learning: OpenCV, PyTorch, TensorFlow, GTSAM, Traditional CV Algorithms, Deep Learning Fundamentals

Software Development: Git, ROS, Unit Testing, Static Analysis (COVERITY), CI/CD Pipelines

PROJECTS

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

Nov 2022 – Dec 2022

- Engineered a robotic perception system in Python to autonomously explore an unknown environment using SLAM while searching for and identifying AprilTag markers.
- Implemented robust 6-DoF pose estimation for detected tags by applying computer vision algorithms and optimizing results with a GTSAM-based factor graph.