Vinay Lanka

Robotics Graduate Student
University of Maryland, College Park

Electronics and Communication Engineering undergraduate from VIT, Vellore
Robotics Software Engineer with competencies in Embedded Systems, IoT and
Web Development.
Certified Robotics Software Engineer by Udacity

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Experience

Robotics Engineer – Newspace Research and Technologies

Jan 2023 – Jul 2023

- Developed solutions for image projection, orthorectification of UAV feeds onto a map. Developed an end-to-end image stitching pipeline that is integrated with the fixed wing swarming stack.

- Develop a standardized pipeline for accessing aerial camera feeds with metadata in simulation staying true to standards (MISB 0601 KLV standard).

R&D Robotics and IoT Lead – Neoflux (Part of TI DMG)

July 2022 – Dec 2022

- Protection One (Client) – Developed a solution for a production grade multithreaded VOIP product with G711 alaw encoding and encryption based on the Raspberry Pi CM4 module. Designed a carrier board with suitable components for audio recording, processing and playback.

- Worked on a set of internal reference projects, blogs for Neoflux (Previously R&D THIS IS! DMG) in the domains of Robotics, Edge ML, IoT.

R&D Robotics and IoT Engineer – This IS DMG GmbH

July 2021 – Jun 2022

- Autonomous Land Mapping Robot – Developed a fully autonomous exploration robot to map an unknown area in 3D. Designed the chassis, electronics and custom algorithms for navigation. Implemented 2-stage EKF (local and global) with RTK GPS for precise position estimates.

- Protection One (Client) – Developed the MVP prototype of the alarm-based VOIP intercom product for Protection One. Used the Raspberry Pi CM4 module.

Research Papers

- Designing and Implementing Robot-Web-Suite, A Cloud Based Robotics Platform. Published in IEEE RAAICON 2021.
Link: https://ieeexplore.ieee.org/document/9929637

Personal Projects

Robot Web Suite

- Implementation of an industry ready robot controller that controls any robot remotely through a web interface. Uses MoveIt, roslibjs and ROS control.
Link: https://www.youtube.com/watch?v=37U62tWk-zE

Autonomous Mobile Robot (YouTube Series)

- A fully autonomous robot designed from scratch and documented as a YouTube video series.
Link: youtube.com/playlist?list=PLglm6kGwO6a7AVhKQzmrjcVVic0nvtdyT

Raspberry Pi based colour sorter using DoBot Magician

- A colour sorter based on Computer Vision and a robotic arm with an app to show statistics
Link: youtube.com/watch?v=BghCrTwk0t0&t=21s

Arduino-CLI

- Merged feature contributions and bug fixes
Link: github.com/vinay-lanka/arduino-cli

Education

B. Tech - Vellore Institute of Technology, Vellore.
2017-2021 | CGPA - 8.83

Skills

ROS (Robot Operating System), Robotics, IoT, Computer Vision, Embedded Systems (Arduino, AVR), Single Board Computers (Raspberry Pi/Jetson Nano)
Full-stack web development (NodeJS/AngularJS),
CAD (SolidWorks),
Docker, Kubernetes
Programming Languages (C, C++, Java, Go, Python)

Certifications

Robotics Software Engineer Nanodegree – Udacity

Certified SolidWorks Associate (CSWA)

Organisations

IEEE VIT Vellore Student Chapter
Board Member – Technical Lead
August 2019 - September 2020

Achievements

- Cofounded ReTag, a retail security start-up, funded by the TBI-VIT
- Winner and finalist in numerous hackathons Invited to take a session on Robotics in Orange school – Arani
- Speaker in the Node.IO workshop in the college's technical fest – GraVITas
- Helped organise IEEE Techloop Hack and other events held by IEEE VIT student chapter.

Blogs/Tutorials

Medium - @vinaylanka

- Exploring Embedded - A Primer
- Control any Robotic Arm with ROS
- Making a hyper-engineered water alarm solution

YouTube – Vinay Lanka

- Autonomous Rover from scratch (ROS)