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Parthan Manisekaran, Werkstudent

A Passionate Robotics Enthusiast with a knack for learning new tech and developing real world applications. A Maker by heart, will probably be seen around with wires and tools.

Education

Masters in Robotic Systems Engineering, RWTH Aachen University, Aachen

October 2021 — Present

Courses: Robot Kinematics and Dynamics, Machine Learning, Control Systems

Bachelor of Technology in Mechanical Engineering, PES University

August 2016 — July 2020

GPA: 8.43/10.0

Links

Linkedin

Github

Experience

Research Associate at PES Centre for Robotics, Automation and Intelligent Systems

August 2019 — September 2021

- Initiated Project Quadbionics, a unique use of Supernumerary Robotic Limbs (SRL) to aid Disaster Relief Operatives to help them manage debris after calamities.
- Designed and analyzed the SRL required to manage debris.
- Implemented Vision and Autonomous Capabilities in Project Quadbionics
- Developed the Path planning workflow for the manipulator (Perceive, Process Vision based data for debris coordinates and push the debris) using ROS, MoveIt and OpenCV

Co-Founder at Newolf Society

August 2020 — Present

- Newolf Society is a community which helps Engineering Undergrads learn and build with latest technology, network and collaborate on projects with other like-minded peers.
- My responsibilities involve making major decisions in the community, managing roles inside the community and leading the marketing team.

Teaching Assistant at PES Centre for Innovation and Entrepreneurship

January 2020 — May 2020

- Assisted in setting up the Intel OpenVINO framework as a curriculum for sophomore students of PES Department of Electronics and Communication.
- Guided students to finish their capstone projects by taking up demo classes and presentations.

- Evaluated students' capstone project and collected insights from the students to enhance the course experience for the next batch.

Academic Projects

Project Lysis, Aachen

January 2022 — Present

- Inspired by the Intel Openbot, working towards democratizing Robotics for all.
- Building a Robotic Ecosystem for learning and research with focus towards cost, user-friendliness and modularity.
- Working at IGMR, RWTH Aachen Univ

Supernumerary Robotic Limbs for the Visually Impaired, Bengaluru

January 2020 — June 2020

- Developed the idea to use SRLs with Vision Capabilities for Visually Impaired to avoid obstacles and grasp objects
- Designed and Analyzed the Supernumerary Robotic Limb (Autodesk Fusion 360). Programmed the SRL to take in visual feed and classify different objects (OpenCV, YOLO Model) and integrated it with the Servos of the Arm (Raspberry Pi, Arduino)
- Bachelors thesis project

Patents and Publications

ARMER: Modular and Semi-Autonomous Supernumerary Robotic Limbs for Disaster Relief

December 2021

- Published in ACM Advances in Robotics 2021 conference.
- Link

Supernumerary Robotic Limbs for the Blind

December 2020

- Research Paper based out of the thesis project selected in IEEE National Conference : Indicon 2020.
- Link

A system and method for runtime modification of constellation of flying objects in midair

January 2019 — May 2019

- Indian Patent Pending in the field of Drone Computing (App No: 201941047695)
- Developed a concept of using multiple drones to integrate together to form one flying object to pick up heavier payloads and malfunctioning drones.
- As part of the research program through Drone Computing Course

Competitions

Microsoft Hashcode

October 2018 — December 2018

- Developed an Augmented Reality based Solution to portray 2D mechanical designs in 3D for Engineering Students
- Awarded the Runners up amongst 20 teams across the state.

- Also represented the university in Big Idea Summit held in Mumbai, India and awarded a seed fund of INR 20,00,000

Xinova Request for Innovation for Connected Cars

May 2018 — August 2018

Presented a pitch on inter-vehicle communication using emoji, in response to an RFI from Honda. Awarded a cash prize of $500 dollars for conceptualization and documentation of the solution over a period of 4 months.

Finnovatica by Fullerton India

June 2017 — August 2017

- Presented a gamified approach to learn banking and finance for teenagers and young professionals.
- Competed amongst 10 teams from all over India. Reached the semifinal stage.

Academic Achievements

Dr. CNR Rao Merit Scholarship

2017 — 2018

Scholarship presented to the top 20% of the Mechanical Department.

Distinction Award

2016 — 2020

Awarded for academic merit

Skills

Python

Robot Operating System (ROS)

Microcontrollers: Nvidia Jetson Nano, Raspberry Pi

MoveIt Motion Planning Framework

Unity

C++

Autodesk Fusion 360

OpenCV

Tensorflow

Languages

English Native speaker

Kannada Native speaker

German A2

Tamil Native speaker

Hindi Highly proficient