Parthan Manisekaran

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WORK EXPERIENCE

University research assistant (HiWi)

Institute of Mechanism Theory, Machine Dynamics and Robotics, RWTH Aachen University [02/2022 – Current]

City: Aachen

Country: Germany

- Working on Project Lysis, a modular application to control ANY ROS based Robots and deploy software models with ease
- Developed a basic Progressive Web App which can read and write ROS topics through MQTT and control Robot Manipulators
- Currently extending the app to other Robotic Manipulators and Mobile Robots and developing Computer Vision Features allowing Robotic manipulators to "see" through the app itself

University Research Associate

PES Centre for Robotics, Automation and Intelligent Systems [08/2019 – 09/2021]

City: Bengaluru

Country: India

- Lead the 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

Teaching assistant

PES Centre for Innovation and Entrepreneurship [01/2020 – 05/2020]

City: Bengaluru

Country: India

- 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.

EDUCATION AND TRAINING

M.Sc. Robotic Systems Engineering

RWTH Aachen University [10/2021 – Current]

Address: 52074 Aachen (Germany)

https://www.academy.rwth-aachen.de/en/

Subjects Include: Advanced Robot Kinematics and Dynamics, Machine Learning, Computer Vision and Robotic Systems

Bachelor of Technology in Mechanical Engineering

PES University [08/2016 – 08/2020]

Address: 560085 Bengaluru (India)

https://pes.edu

Final grade : 8.43/10

Thesis: Supernumerary Robotic Limbs for the Visually Impaired

Subjects Include: Hydraulics and Pneumatics, Aerospace Propulsion, Drone Computing, CFD

LANGUAGE SKILLS

Mother tongue(s): **Tamil** | **Kannada**

Other language(s):

English

LISTENING C2 **READING** C2 **WRITING** C2

SPOKEN PRODUCTION C2

SPOKEN INTERACTION C2

German

LISTENING A2 **READING** A2 **WRITING** A2

SPOKEN PRODUCTION A1

SPOKEN INTERACTION A1

DIGITAL SKILLS

My Digital Skills

Python (NumPy, Pandas, Scikit-learn, TensorFlow, Spacy) / ROS (MoveIt, Gazebo, RVIZ) / Git / C++ / Autodesk Fusion 360 / Computer Vision (OpenCV) / Unity -Vuforia Augmented Reality / Unity Virtual Reality / Linux / Good command of Arduino, Raspberry Pi platforms

PUBLICATIONS

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

[2021]

https://dlnext.acm.org/doi/abs/10.1145/3478586.3480649

Supernumerary Robotic Limbs for the Blind

[2020]

https://ieeexplore.ieee.org/abstract/document/9342553

HONOURS AND AWARDS

Runners-up at #hackingforfuture

Fraunhofer IPT [22/05/2022]

- The Hackathon was related to Time Series Classification with Transformers. The data given to us was the Ford Engine Time series dataset.
- We had to implement a transformer algorithm for classification of time series dataset and compare the results with the LSTM network
- We achieved a result of 90.9% Accuracy with Voting between two transformer models as compared to 75% accuracy with LSTM. Link to the presentation below:

shorturl.at/DMU38

Runners-up

i-Days by EIT Health [05/11/2021]

- A Three-day ideathon event to develop novel healthcare solutions to avoid a pandemic in the future. We ideated a "MedTalk" a Social Network for Doctors which focuses on transparency and secure communication so that "information spreads faster than the pandemic"
- Won the Runners-up and the best pitch award which was a total prize worth 250 Euros and a startup workshop at the Gateway Exzellenz Start-up Center in Cologne.
- Link to be presentation below:

shorturl.at/eFKN2

Runners-up

Microsoft Hashcode [2018]

Won Runners up amongst 20 teams across the State. Also secured a seed fund of $ 26,000 for starting an Augmented Reality based startup

Request for Innovation in Connected Cars

Xinova [2018]

Received a price money of $500 Dollars for presenting a solution on Inter-vehicle communication through Emoji

Dr CNR Rao Academic Scholarship

PES University

Received a scholarship of $320 USD