

# Parthan Manisekaran

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## ● WORK EXPERIENCE

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02/2022 – CURRENT – Aachen, Germany

**UNIVERSITY RESEARCH ASSISTANT (HIWI) – INSTITUTE OF MECHANISM THEORY, MACHINE DYNAMICS AND ROBOTICS, RWTH AACHEN UNIVERSITY**

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- 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

08/2019 – 09/2021 – Bengaluru, India

**UNIVERSITY RESEARCH ASSOCIATE – PES CENTRE FOR ROBOTICS, AUTOMATION AND INTELLIGENT SYSTEMS**

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- 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

01/2020 – 05/2020 – Bengaluru, India

**TEACHING ASSISTANT – PES CENTRE FOR INNOVATION AND ENTREPRENEURSHIP**

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- 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

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10/2021 – CURRENT – Aachen, Germany

**M.SC. ROBOTIC SYSTEMS ENGINEERING – RWTH Aachen University**

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

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

08/2016 – 08/2020 – Bengaluru, India

**BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING – PES University**

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

**Thesis:** Supernumerary Robotic Limbs for the Visually Impaired

8.43/10 | <https://pes.edu>

## ● LANGUAGE SKILLS

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Mother tongue(s): **TAMIL** | **KANNADA**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C2	C2	C2	C2	C2
<b>GERMAN</b>	A2	A2	A1	A1	A2

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

## ● DIGITAL SKILLS

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### 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

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

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<https://dlnext.acm.org/doi/abs/10.1145/3478586.3480649> – 2021

### Supernumerary Robotic Limbs for the Blind

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<https://ieeexplore.ieee.org/abstract/document/9342553> – 2020

## ● HONOURS AND AWARDS

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22/05/2022

### Runners-up at #hackingforfuture – Fraunhofer IPT

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- 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](https://shorturl.at/DMU38)

05/11/2021

## **Runners-up – i-Days by EIT Health**

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- 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](https://shorturl.at/eFKN2)

2018

## **Runners-up – Microsoft Hashcode**

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

2018

## **Request for Innovation in Connected Cars – Xinova**

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

## **Dr CNR Rao Academic Scholarship – PES University**

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Received a scholarship of \$320 USD