



Philip Modayil

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in philipmodayil

pvmodayil

Education

2024. M.S.c. Automation and Robotics

TU Dortmund

Dortmund – Germany

2019. B.Tech. in Electrical and Electronics Engineering

College of Engineering

Trivandrum (KTU)

Trivandrum – India

Skills

Deep Learning, Generative AI, Computer Vision, Robotics, Data Analysis, Research, Presentation.

Languages

- English: Fluent, C2
- German: Basic, A2

Experience

Jan. 2024 – Present. Research Assistant

DT/IPL, TU Dortmund

- Shape Optimisation:** Developing a prediction algorithm for characteristic impedance calculation using shape optimisation of stripline potential curves.

Publication: *AI-based Hybrid Approach (RL/GA) for Calculating the Characteristic Parameters of a Single Surface Microstrip Transmission Line*

- PCB Design Assistant:** Building an AI-powered assistant for PCB designers, integrating language, image, and simulation analysis to automate design tasks and boost productivity.

May. 2022 – Sep. 2024. Student Data Scientist

Wilo SE

- Smart Sensor:** Designed, implemented, and deployed real-time feature extraction and predictive maintenance algorithms for smart pump systems using PySpark and LOESS-based ML models for proactive monitoring, early fault detection, and improved system reliability.

Projects

- Police Report Insight** | *AI for Good community*

Extract insights and create a mind map by incorporating automated document analysis and RAG enrichment.

- ragyphi** | *Personal*

Full RAG pipeline library for contextualised and intelligent data retrieval.

- Hazard Inspection** | *BMW Inno Challenge 2024*

Automated hazard inspection with scene understanding using drone images.

Programing

Python ●●●○

C++ ●●○○

C ●●○○

Tools

PySpark ●●○○

PyTorch ●●○○

ROS2 ●○○○