Dinesh Kumar Rajakumaran

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LinkedIn — GitHub — Portfolio
Wels, Austria



Skills

- **Software Skills:** MATLAB/Simulink, Python, C, CATIA, SolidWorks, 3DEXPERIENCE, AutoCAD, ANSYS Workbench, Modelica, Dymola, CANoe, CANalyzer, LabVIEW, ROS 1/2, ROS Toolbox, Foxglove Studio, PyTorch, Linux Systems.
- **Automotive Standards & Systems:** Powertrain and Transmission Systems, Engine Systems, Vehicle Dynamics, ABS/ESP, Brake and Suspension Systems, CAN Communication, Automotive Ethernet, AUTOSAR Fundamentals, Functional Safety (ISO/SAE 26262).
- **Technical Experience:** 1-D Numerical Modelling, System Linearization, Control System Design, PID Control, Model Predictive Control (MPC), Finite Element Analysis (FEA), Model and Thermal Analysis, Data Analysis, Data Logging, Software-in-the-Loop (SIL), Simulation-Based Testing, Verification and Validation.
- **Additional Knowledge**: Engine CFD Fundamentals, Neural Networks and Large Language Models (LLMs), Embedded Systems, Real-Time Systems, Automotive Cybersecurity (ISO/SAE 21434)
- **Driving Licences:** Class B (Car), Class A (Motorcycle).

Professional Experience

BRP-Rotax GmbH & Co KG, Austria **Oct 2024 – Jun 2025**
FH Praktikant – Control Systems Engineering

- Developed and validated nonlinear vehicle dynamics models for hydrofoil-based personal watercraft using MATLAB/Simulink simulations.
- Performed system linearization and simulations to evaluate cascaded PID and L-MPC performance under varying operating conditions.
- Applied state estimation, analyzed closed-loop responses, and optimized control strategies for robustness and nonlinear system behaviour.
- Compared PID and L-MPC architectures, documenting robustness, optimality, and limitations under nonlinear operating conditions.

Continental AG, Austria **Feb 2024 – Jun 2024**
Master's Project Student

- Developed MATLAB-based workflows using ROS Toolbox and Foxglove Studio for automotive sensor data evaluation.
- Processed recorded ROS datasets to inspect sensor signals, assess behaviour, identify anomalies, and support system verification.
- Configured ROS-based data acquisition and processing workflows for reliable sensor-data handling, analysis, and visualization tasks.
- Documented evaluation methods and communicated sensor-analysis results with project decisions.

Royal Enfield Global Headquarters, India **Mar 2022 – Sept 2023**
Vehicle Testing Engineer

- Executed development, functional, and regulatory validation of ABS/braking systems across prototype and production motorcycle platforms.
- Planned VAVE, field-issue, alternate-source, and design-change tests, analyzing subjective/objective data against defined validation targets.
- Collaborated with Bosch, Continental, Brembo, Endurance, and Showa on ABS development across brake, suspension, and tire configurations.
- Prepared technical test reports and managed type-approval validation against country-specific regulatory requirements for Europe, USA, LATAM, and India.

Education

University of Applied Sciences Upper Austria **2023 – 2025**
M.Sc. Automotive Mechatronics and Management
Relevant Coursework: Model-Based Engineering, Drive Train Control Systems, Drive Systems & E-Mobility, Mechatronic Systems Validation, Sensors & Micro Actuators, Automotive IT Systems, MATLAB/Simulink, Functional Safety (ISO 26262), Project Management, New Product Development, Vehicle Dynamics, Sensor Fusion, Driving Assistance Systems

Rajalakshmi Engineering College **2017 – 2021**
B.E. Automobile Engineering
Relevant Coursework: Vehicle Dynamics, Automotive Electronics, Automotive Transmission Systems, Internal Combustion Engines, Automotive Chassis Systems, Automotive Electrical and Electronic Systems, Control Engineering, Thermodynamics, Fluid Mechanics, Finite Element Analysis (FEA), Materials Engineering, Production Technology

Projects

- **Master Thesis - Nonlinear System Modeling and Control Design of Personal Watercraft**
- **Sensor Data Evaluation using ROS and MATLAB**
- **Bachelor Thesis - Effect of Injection Pressure and Pilot Injection Timing on the Performance and Emission Characteristics of Biodiesel Fuelled Common Rail Diesel Engine**
- **GitHub Projects** – *Completed and Ongoing projects in automotive engineering, control systems, simulation, and programming.*

Languages

Tamil - Native proficiency. English - C1 level proficiency. German - B1 level proficiency.

References

- **FH-Prof. Dipl.-Ing. Dr.techn. Harald Kirchsteiger:** Professor at University of Applied Sciences Upper Austria.
  Harald.Kirchsteiger@fh-wels.at
- **Wolfgang Stritzinger** System Design Engineer at BRP-Rotax GmbH & Co KG
  wolfgang.stritzinger@brp.com
- **Dipl.-Ing. Andreas Löffler:** Expert in Advanced Radar Sensors and Systems at AUMOVIO GmbH
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