

CONTACT

Sankt Augustin, Germany
+49 155 6023 8390
janniferraj2829@gmail.com

ABOUT ME

Single
Born on: 29.05.2001
Born in: Tiruvarur/India

TECHNICAL SKILLS

- ROS 2
- C / C++
- Python
- Embedded Systems
- ESP32-S3 / STM32
- CAN / UART / Ethernet
- JavaScript / TypeScript
- React
- MATLAB / Simulink
- Origin (advanced)

JANNIFER DURAIRAJAN

ROBOTICS & EMBEDDED SYSTEMS ENGINEER

PROFILE

Electrical Engineering graduate specialising in robotics and embedded systems, with hands-on experience in ROS 2, C/C++, microcontroller integration, and industrial automation. Developed a ROS 2-based software architecture for an intelligent robotic gripper and gained experience with AI-powered humanoid robotics and functional safety. Particularly interested in intelligent robotics, safe human-robot interaction, and reliable software-hardware integration.

EDUCATION

M.Sc. Electrical Engineering
University of Stuttgart | 04/2023 - 08/2026 | Stuttgart, Germany

B.E. Electronics and Communication Engineering
Saranathan College of Engineering | 08/2018 - 09/2023 | Trichy, India

ROBOTICS & PROFESSIONAL EXPERIENCE

MASTER'S THESIS - ROS 2 SOFTWARE ARCHITECTURE FOR AN INTELLIGENT GRIPPER

IWB, University of Stuttgart | 01/2026 - 06/2026 | Stuttgart, Germany

- Developed a ROS 2-based software architecture for controlling an intelligent robotic gripper using ESP32-S3 and STM32 microcontrollers.
- Implemented C/C++ software for motor control, sensor feedback, and embedded-system integration.
- Worked with CAN, UART, and Ethernet interfaces and investigated hardware-software communication challenges.

ROBOTICS & FUNCTIONAL SAFETY INTERN

Pilz GmbH & Co. KG | 05/2026 - 07/2026 | Stuttgart, Germany

- Researched and designed AI-powered humanoid robot applications for industrial automation.
- Integrated concepts in machine vision, robot navigation, and functional safety for real-world manufacturing scenarios.

RESEARCH PROJECT - SLIDE ELECTRIFICATION

Institute for Photovoltaics | 12/2024 - 06/2025 | Germany

- Designed a flow-controlled experiment to study the effect of droplet velocity on slide electrification.
- Used flowmeter, oscilloscope, current amplifier, and Python-based signal processing and statistical analysis.

STUDENT ASSISTANT - FRONTEND DEVELOPMENT

ITLR, University of Stuttgart | 12/2024 - 02/2025 | Germany

- Developed the user interface for the SynTrac Ergometer App in JavaScript and improved usability and frontend functionality.

SOFTWARE DEVELOPER

Pilz GmbH & Co. KG | 10/2023 - 04/2024 | Stuttgart, Germany

- Built frontend components with HTML, CSS, JavaScript, TypeScript, and React, with focus on usability, performance, and maintainable code.

SOFT SKILLS

- Analytical thinking
- Independent working style
- Communication skills
- Adaptability & learning agility

LANGUAGES

Tamil: Mother tongue

English: C2

German: A2 and now learning B1-B2

GRADUATE STUDENT ASSISTANT - SECRETARIAT

IST, University of Stuttgart | 09/2023 - 10/2023 | Stuttgart, Germany

- Supported correspondence, event coordination, and administrative organisation in an academic environment.

ACADEMIC DEVELOPMENT, SEMINARS & PROJECTS — INDIA

SEMINAR — BRAIN FINGERPRINT TECHNOLOGY

Saranathan College of Engineering

- Explored Brain Fingerprint Technology as a scientific approach for identifying concealed information through electroencephalographic (EEG) measurements.
- Focused on the P300-Mermer response, a characteristic brainwave pattern associated with recognition of stored information.

WORKSHOP — EMBEDDED SIGNAL PROCESSING USING ARM CORE

PSG College of Technology | 09/2019 | India

- Participated in the workshop “Embedded Signal Processing using ARM Core” and studied the architecture and practical use of ARM processors.
- Learned about ARM Cortex and ARM7 processors and their applications across different technical domains.
- Completed simple practical projects using ARM-based processors to strengthen embedded-processing fundamentals.

INTERNSHIP — APPLICATIONS USING IOT

Pantech ProEd Pvt Ltd | 07/2019 - 08/2019 | India

- Worked on IoT-oriented projects involving circuit design, Arduino platforms, and microcontrollers.
- Gained introductory hands-on exposure to Raspberry Pi and related microprocessor platforms.
- Developed a broader understanding of embedded-systems technologies and their role in connected applications.

PROJECT — SMART AGRICULTURE USING SENSORS AND NODEMCU

Academic Project | 07/2019 - 08/2019 | India

- Developed a smart-agriculture concept using sensors and NodeMCU to estimate soil-fertility conditions in real time and support fertilizer and compost recommendations.
- Measured soil and air moisture using sensors and automated the monitoring process through IoT-based connectivity.
- Designed the system so that the process could be controlled through an application that displayed observations and derived inferences for further consultation with farmers.
- Project work was undertaken in the context of the Smart India Hackathon.

PROJECT — LAND USE & LAND COVER CLASSIFICATION USING LANDSAT IMAGES

Academic Project | 03/2022 - 06/2022 | India

- Applied supervised-learning classification and remote-sensing methods to Landsat satellite imagery to detect changes in land use and land cover.
- Performed image segmentation, calculated covered areas, and used the Normalized Difference Vegetation Index (NDVI) as part of the analysis.
- Interpreted the resulting data to identify increases or decreases in water bodies, urban areas, and forest coverage.