NP

Nakul Rajendra Pandhare

Embedded Systems & Robotics Engineer — BLE • ROS2 • Microcontrollers

CONTACT

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Location: Stuttgart, Germany

LinkedIn:

CORE SKILLS & TOOLS

Bluetooth Low Energy (BLE) | ROS / ROS2 | Python | C / C++ | Kotlin (Android BLE) | ESP32 | Arduino | Raspberry Pi | Linux | Git / GitHub | PLC (TwinCAT) | VHDL

LANGUAGES

English (C1)

German (A2)

Hindi (Native), Marathi (Native)

HOBBIES

Drums & Percussion • Travelling • Cooking

PROFILE

Embedded Systems Engineer with experience in Bluetooth Low Energy (BLE) feature development, ROS2-based robotics, and microcontroller product development. Proven ability to design and test connectivity solutions using Nordic nRF52 platforms, develop ROS2 interfaces (C++), and build embedded prototypes with ESP32 / Arduino. Strong programming background in Python and C/C++, exposure to Kotlin for Android BLE testing, and experience with industrial PLC (TwinCAT). Seeking roles in robotics, connected devices, or embedded systems development.

WORK EXPERIENCE

ANDREAS STIHL AG & Co. KG — System Communication & Connected Devices

Praktikant / Werkstudent (Jul 2024 – Present) • Stuttgart, Germany

- Developed and tested Bluetooth Low Energy (BLE) features for current and upcoming products using Kotlin, C/C++, and Python.
- Worked hands-on with Nordic nRF52 evaluation boards to validate connectivity and robustness of BLE communication stacks and test applications.
- Collaborated with cross-functional teams to integrate BLE features into product workflows and improve test automation for connectivity scenarios.

BEC Robotics GmbH — Werkstudent Roboticist

Nov 2023 – Apr 2024 • Pfullingen, Germany

- Implemented an interface for seamless data exchange between a mobile robot and external localization software using ROS2 (C++).
- Performed system tests to validate robot behavior with external localization and improved integration reliability.

Institute for Control Technology (ISW), University of Stuttgart — Research Assistant

Jan 2023 – Sep 2023 • Stuttgart, Germany

- Programmed and optimized Gantry Laser Scanners using Beckhoff TwinCAT PLC; tested compensation methods to increase operational efficiency.
- Assisted in experiments and data analysis to refine control strategies for precision manufacturing equipment.

Technoventor Innovations Pvt. Ltd — Embedded Product Development Intern

Dec 2021 – Jun 2022 • Nagpur, India

- Developed sensor-driven embedded prototypes using Arduino and microcontrollers; implemented interfacing with actuators and communication modules.
- Contributed to a POC for Indian Central Railway to detect open wagon doors and improve safety protocols.

EDUCATION

MSc in Information Technology (INFOTECH)
University of Stuttgart — Oct 2022 – Present

B.E. Electronics & Telecommunication
G.H. Raisoni College of Engineering, Nagpur — Jul 2018 – Jun 2022 (CGPA: 8.51/10)

PROJECTS (SELECTED)

- **Mobile Robot Risk Estimation Framework** — Extended and optimized a Probabilistic Roadmap (PRM) path planning algorithm and built risk assessment modules in Python for industrial mobile robots.
- **Autonomous Agriculture Robot** — Designed an autonomous field robot for seed sowing, spraying, and watering using Arduino-based control systems (C).
- **Wagon Train Open Door Detection** — Built a transmitter/receiver POC using Arduino Uno to detect open wagon doors for railway safety systems.

ACHIEVEMENTS

- Best Paper Award — IEEE-ICCICA-2021 for "Design of Multipurpose Agro System Using Swarm Intelligence" (Nov 2021).
- Top 30 Ideas — India International Science Festival (IISF) 2021 (Dec 2021).
- Chair — IETE Student Forum (Sep 2021).

KEYWORDS

Embedded Systems, Bluetooth Low Energy (BLE), ROS2, Robot Operating System, Python, C/C++, Microcontroller Programming, ESP32, Arduino, Raspberry Pi, Linux, Kotlin, Nordic nRF52, TwinCAT, PLC, VHDL, Git, Test Automation, Connectivity Testing, PRM, Path Planning, Risk Assessment

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