Contact

www.linkedin.com/in/
joeljohnson-1999 (LinkedIn)
joel1729johnson.wixsite.com/my-
site (Blog)

Top Skills

STM32cubeIDE
3D Printing
Robot Programming

Certifications

Using Python to Access Web Data
Programming for Everybody (Getting
Started with Python)
Python Data Structures
MATLAB Certified
Non-Conventional Energy
Resources

Joel Johnson
Master's Graduate | Embedded Systems/Robotics Enthusiast
Bayreuth, Bavaria, Germany

Experience

Siemens Healthineers
2 years 1 month

Werkstudent
February 2025 - May 2025 (4 months)
Kemnath, Bavaria, Germany

• Designing and integrating electrical systems involving motors, drivers, and
custom PCBs
• Developing embedded firmware for STM32 and ESP32 microcontrollers
• Building SLAM solutions using RTAB-Map for real-time localization
• Designing and 3D printing CAD models for hardware iterations

Master Thesis Student
July 2024 - January 2025 (7 months)
Kemnath, Bavaria, Germany

• Developed an autonomy roadmap aligned with SAE standards for hospital-
ready AMRs
• Fused sensor data from IMU, VIO, and encoders for robust localization
• Integrated LiDAR and depth camera data for real-time obstacle detection
• Built collision avoidance modules for dynamic and cluttered environments
• Established I2C, UART, and MQTT communication between microcontrollers

Werkstudent
September 2023 - July 2024 (11 months)
Kemnath, Bavaria, Germany

• Designed modular ROS-based system architecture (comprising Localization,
Perception, Cognition and Locomotion modules) for AMRs
• Implemented SLAM and navigation algorithms for indoor exploration
• Developed firmware for STM32, ESP32, and Arduino for system integration
• Built OpenCV-based object detection pipelines for onboard processing
• Integrated motor drivers and hardware peripherals for motion control

Electrical Engineering Intern
May 2023 - September 2023 (5 months)
Kemnath, Bavaria, Germany

• Designed PCBs and debugged circuits with oscilloscopes

• Sized motors for robotic applications and optimized power consumption

• Integrated UWB-based positioning systems

• Prototyped components using CAD tools and 3D printing

Triatech
Intern
July 2021 - September 2021 (3 months)
Kochi, Kerala, India

Design and installation of solar panels and related circuits.

Preparing line diagrams and wiring diagrams for corporate and house installations.

Pre-commissioning tests of high voltage transformers.

Polarization index test of motors.

Automation works involving PLCs of Allen Bradley and ABB.

Kerala Electrical & Allied Engg. Co. Limited.
Intern
June 2019 - July 2019 (2 months)
Kochi, Kerala, India

Keltron
Intern
June 2019 - July 2019 (2 months)
Thrissur, Kerala, India

Simulation and design of Buck, boost and Buck Boost Circuits using Matlab Simulink

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Education

Hochschule Stralsund
Master's degree, Renewable Energy and E-Mobility · (March 2022 - July 2025)

IPCS Global
Vocational, Automation Engineer Technology/Technician · (September 2021 - November 2021)

Rajagiri School of Engineering & Technology
Bachelor of Technology (Honors), Electrical and Electronics Engineering · (August 2017 - July 2021)