

# Rafał Cielenkiewicz

ELECTRONIC AND COMPUTER ENGINEER

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## Experience /

### KBA Automatic

Opole, Poland

#### PRACTICES

Aug. 2023 - Sep. 2023

- Practical experience with PLC and HMI programming, Siemens S7-1200 and S7-1500.
- Programming and integrating the Mitsubishi Melfa RV-2SD robot with external sensors and controllers.
- Designing and simulating automation processes using TIA Portal and Factory IO for real-world applications.
- Developing and testing automation scenarios, including security system simulations and industrial control setups.

### Volvo

Wrocław, Poland

#### PROJECT

Feb. 2024 - July 2024

- Driver identification system for Volvo buses, focusing on embedded systems and real-time data processing.
- Selection of components for prototype development.
- Assembly and prototyping, including component integration and soldering.

## Projects

### WAREHOUSE INVENTORY SYSTEM MODEL USING A MOBILE ROBOT

- Designed and implemented a warehouse inventory system using a mobile robot equipped with a camera and QR code recognition.
- Developed a mobile application to provide a user interface for inventory verification and robot control.
- Built a custom 3D-printed chassis for the robot, optimizing its functionality.
- ESP32-CAM, Arduino Uno R3, and a Motor Shield were used for robot control and vision processing.

### LINE FOLLOWER ROBOT

- Designed and assembled a line-following robot from scratch.
- Selected and purchased components, ensuring optimal performance.
- Gained hands-on experience in robotics, troubleshooting, and embedded system development.

### CUSTOM ARDUINO UNO SHIELD

- Designed and developed a custom shield for Arduino Leonardo using Altium Designer.
- Integrated a 32-bit microprocessor, 5V power supply, and galvanic isolation for enhanced functionality.
- Equipped the board with a temperature sensor, I/O ports, LEDs, and a reset button.
- Personally handled the entire process, from PCB design to soldering and testing.

### SCUBA DIVING SIGNALS RECOGNITION

- Developed a real-time system for recognizing scuba diving hand signals.
- Implemented hand detection using the YOLO object detection model.
- Designed a custom Convolutional Neural Network for gesture classification.

## Skills

**Electronic**, Altium Designer, Arduino, PLC

**Others**, TIA Portal, Windows, Excel, Linux fundamentals

**Programming**, Python fundamentals, C++ fundamentals, MatLab fundamentals

**Certificates**, Volvo Project : Driver identification system, CCNAv7: Introduction to Networks, Cambridge English B1

## Education

### Master degree, Embedded Robotics in English

Wrocław, Poland

WROCLAW UNIVERSITY OF TECHNOLOGY

Mar. 2025 - present

- Embedded Systems, Artificial Intelligence and Machine Learning, Artificial Neural Networks

### Bachelor degree, Electronic and Computer Engineering in English

Wrocław, Poland

WROCLAW UNIVERSITY OF TECHNOLOGY

Sep. 2021 - Feb. 2025

- Microcontrollers, Computer Vision, Robotics, Electronics, Artificial Intelligence, Machine Learning, Automation, Networking