Łukasz Błaszczyk

Warsaw admin@lukemech.org 731 746 825 lukemech.org
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Experience

06.2024 – now
Mińsk Mazowiecki, Poland

Fabryka Urządzeń Dźwigowych S.A. | *Electrical Engineer / Automation Specialist*
Experienced in working with leading industrial automation, electrical and remote control equipment manufacturers, including Siemens, ABB, Danfoss, Schneider Electric, IDEC, SEW, Ditel, Stego, Akerstroms, HBC-Radiomatic, Pepperl+Fuchs, Telemecanique, Wieland, Igus and Kübler. Skilled in integrating and programming automation systems, as well as configuring and maintaining various electrical components from these suppliers.

- Created detailed electrical schematics and BOMs for cranes using SEE Electrical
- Developed automation programs in Siemens TIA Portal and ABB Automation Builder (CodeSys)
- Designed HMI automation in WinCC, building control/monitoring screens and diagnostic panels in WinCC and HTML
- Utilized Solid Edge CAD for mechanical tasks supporting electrical design
- Configured and parameterized frequency converters (inverters) from Danfoss / Vacon, Schneider Electric, and ABB
- Compiled full documentation for cranes and hoists and delivered it to clients
- Prepared and submitted technical documentation to UDT/TDT for certification processes

07.2023 – 08.2023
MEDCOM Sp. z o.o. | *Production Support Worker*

09.2022 – 10.2022
MEDCOM Sp. z o.o. | *Production Support Worker*

06.2022 – 07.2022
MEDCOM Sp. z o.o. | *Production Support Worker*

01.2022
Warsaw, Poland

MEDCOM Sp. z o.o. | *Production Support Worker*
Technologically advanced cross-country company specializing in the production of electrical cabinets and systems for public transportation vehicles, including trains and Solaris buses. The company focuses on high-quality manufacturing processes and precision engineering to meet the demands of the modern transport industry.

- Cable preparation and wiring
- Reading electrical schematics and diagrams
- Learning about electronic and electrical components
- Coating and protecting printed circuit boards (PCBs) using a lacquer station
- Basic electronics handling in a production environment
- Attention to detail and manual precision in technical tasks
- Teamwork in high-standard industrial manufacturing

04.2023
Italy

Erasmus+ | *Cross-country internship*

- Improving English language skills
- Working with mechatronic devices
- Expanding knowledge of electronic systems and programming
- Working with Arduino-based platforms

Education

10.2024 – now
Engineering Degree
Warsaw, Poland

📖 **Politechnika Warszawska** | *Mechatronics of Vehicles and Construction Machinery*
After completing two semesters of this challenging engineering program, I can confidently say that I have significantly deepened my understanding of mechatronics, especially in the context of modern vehicles and machinery. The coursework has provided me with both theoretical foundations and practical skills necessary to excel in modern mechanical and electrical systems engineering.

- Developed advanced proficiency in reading, analyzing, and interpreting complex technical drawings and engineering schematics, which form the backbone of effective mechanical and electrical design processes.
- Enhanced my mechanical engineering knowledge by studying key theoretical concepts such as dynamics, materials science, and structural analysis, while simultaneously applying these principles through hands-on laboratory work and projects.
- Contributed as a co-author to the open-source dynpy project, collaborating closely with other developers and researchers to improve the codebase and resolve complex issues, including the one documented here.
- Acquired practical experience using MATLAB for technical computing, data analysis, and simulation tasks, enabling me to approach engineering problems with computational tools and methodologies.
- Demonstrated proficiency in computer-aided design (CAD) software by leveraging prior experience with Solid Edge, while also exploring SolidWorks to validate similarities in interface and functionality for efficient 3D modeling and component design.
- Took on an active leadership role as a co-owner and co-author within the student scientific group and engineering club known as Studenckie Koło Naukowe Pojazdów Niekonwencjonalnych "Admirał", contributing to innovative projects and research initiatives focused on unconventional vehicle design.

09.2019 – 05.2024
Mińsk Mazowiecki, Poland

🟥 **Zespół Szkół Zawodowych nr. 2 im. Powstańców Warszawy** | *Mechatronics*
This technical secondary education program was focused on mechatronics, providing me with a solid foundation in automation, robotics, and electronics. Throughout my studies, I developed a wide range of practical skills and theoretical knowledge, culminating in the successful completion of both the vocational qualification and the Matura exam, certifying my readiness for higher education or professional work.

- Graduated with distinction, reflecting my dedication, academic excellence, and mastery of core subjects within the mechatronics curriculum.
- Completed the vocational module ’ELM.03 - Assembly and operation of mechatronic systems,’ acquiring hands-on experience in building, testing, and troubleshooting complex mechatronic assemblies.
- Completed the module ’ELM.06 - Programming and operation of mechatronic devices,’ which equipped me with the necessary skills to program and operate a variety of mechatronic devices, including embedded control systems.

Courses

06.2025
Wrocław, Poland

👨‍🔧 **Polish PLC Programming Championships** | ***edition VII***
The Mistrzostwa PLC is a premier national competition promoting excellence in PLC programming, bridging academia and industry, and identifying top emerging talents in industrial automation. I competed in OPEN and Expert categories using Siemens PLCSpace (TIA Portal), LOGO!, and Finder/Arduino with OPTA and Fatek controllers. Enhanced industrial automation programming skills in a competitive setting.

03.2025
Warsaw, Poland
Łódź, Poland

😎 **Hackathon (Econverse) | *Link* | *Our template solution***
I participated in a hackathon, in the challenge organized by Kozminski University that focused on automating and optimizing recruitment processes through intelligent systems. Our team developed an innovative solution named *LockIn AI-Based*, which applied artificial intelligence techniques to increase recruitment effectiveness. Our solution stood out for its creativity and practical impact, ultimately winning first place in the competition. This experience reinforced my skills in software development, teamwork, and applying AI in real-world problems.

10.2024
Brenna, Poland

🛠️ **4Better Automation Course | *Certificate***
This comprehensive course was designed to deepen technical knowledge and practical skills related to industrial automation. It covered a broad range of topics including drive systems and motors by SEW-Eurodrive, sensor technologies and industrial communication solutions by Pepperl+Fuchs, as well as high-performance polymer components and cable carrier systems produced by Igus. The course enabled me to gain valuable insights into cutting-edge automation components and their integration into modern industrial processes.

06.2024
Wrocław, Poland

👨‍🏭 **Polish PLC Programming Championships | *edition VI* | *Group photo***
Competed in OPEN and Master categories using Siemens Horizon (TIA Portal), LOGO!, and Finder/Arduino with OPTA controllers. The event provided valuable learning opportunities and a platform to network with peers and industry professionals.

2023

🇬🇧 **English knowledge certificate (C1) | *Certificate***
Achieved an advanced English proficiency level, certified at C1 according to the Cambridge English Scale methodology. This certification reflects my ability to communicate effectively in professional and academic contexts, demonstrating a high level of language fluency and comprehension.

Skills

🌍 **Languages**
Native 🇵🇱 Polish speaker with full fluency in the language, complemented by advanced proficiency in 🇬🇧 English at the C1 level. My bilingual skills allow me to communicate effectively in diverse international settings, both in written and spoken forms, facilitating cross-cultural collaboration and professional interaction.

08.2023

🚗 **Driving license: Category B**
Holder of a valid category B driving license, enabling me to operate standard passenger vehicles legally. Beyond the license, I have a genuine passion for driving and maintaining vehicles, which enhances my mobility and flexibility for both personal and professional purposes.

🗂️ **Microsoft Software**
Proficient in using Microsoft Word, Excel, and PowerPoint, supported by experience gained through various projects and workplaces. I comfortably use the Office suite for creating documents, data analysis, preparing presentations, and providing project support. Additionally, I have knowledge of PowerApps software and experience in developing applications in this environment during my collaboration with the company SpinBit.

🦾 Automation Development

Experienced in developing automation solutions using industry-leading tools such as Siemens TIA Portal, ABB Automation Builder, CodeSys, Arduino PLC IDE, and Fatek WinProLadder. Competent in designing and programming Human Machine Interfaces (HMIs) through platforms like Siemens WinCC, IDEC, and ABB, often incorporating HTML to enable web-based control, software updates, remote access, and diagnostics. Additionally, I have hands-on experience integrating Kübler encoders through Profinet networks, enhancing precision control.

⚡ Electrical Design

Proficient in electrical design software, primarily SEE Electrical Expert (IGE+XAO), and experienced with comparable tools used in the electrical engineering domain. My skills include creating detailed wiring diagrams, schematics, and BOMs tailored to complex industrial applications, ensuring precise and efficient electrical system design.

👨‍💻 Programming

Proficient in several programming languages, primarily 🐍 Python and 🟫 C++. Experienced in software development processes, including version control using 🧬 Git. I develop web and mobile applications, integrate software with hardware, and solve algorithmic problems. Additionally, I have a strong knowledge of Linux-based systems and containerization tools such as Docker.

📦 Databases

Good knowledge of NoSQL databases (including MongoDB), occasionally used in my projects. Familiar with fundamental SQL concepts and data structures, though I prefer working with formats like JSON, which I find more intuitive and flexible in my workflow.

⚙️ Embedded Systems Programming

Completed multiple projects involving microcontroller platforms such as ESP series, Arduino, and STM32. Skilled in embedded C/C++ programming, peripheral integration, and real-time system design, focusing on reliable and efficient embedded solutions.

📟 PCB Design

Proficient in using KiCad for designing printed circuit boards (PCBs), including schematic capture, layout design, and generation of manufacturing-ready BOMs. Familiar with the entire PCB design workflow from concept through to production documentation.

🕹️ Game Development

Practical experience developing games using the Unity engine and its scripting environment. This includes designing gameplay mechanics, creating user interfaces, and integrating assets to deliver engaging interactive experiences.

Projects

2023 – now

🪐 Website | *Link*

Developed a personal website that serves multiple purposes including hosting my professional services and tools. The platform also supports the distribution of firmware updates for several of my ongoing hardware projects, providing a centralized online presence and resource hub.

12.2024 – now

🔄 SmartPrzyczepka | *Closed source* | *Summary*

A project built around the ESP32C3 microcontroller and the ESP-IDF framework, designed to control various outputs in a camper trailer using button inputs. This system enhances user interaction with the trailer's electrical components, enabling custom automation and remote control functionality.

10.2024 🎬 **Video Encoder** | ***Code***
Developed a video encoding project aimed at standardizing codecs and file formats for video files, with an additional goal of reducing file sizes. The system allows users to fork the repository, enable GitHub Actions workflows, input a video URL, select encoding settings, and watch the encoding process automatically execute using ffmpeg, streamlining video processing workflows.

03.2023 – now 💡 **AlphaLED** | ***Project: Old, ESP8266-based / New, ESP32C3-based*** | ***Summary***
Wi-Fi controlled LED matrix project based on ESP microcontrollers featuring an 8x8 LED grid with multiple control functions accessible via a web-based interface. The project focuses on combining advanced embedded hardware with user-friendly software control, providing both practical lighting applications and an engaging interactive experience.

02.2024 📻 **AI Radio** | ***Code*** | ***discontinued***
An automated MP3-play radio project that leverages algorithms to automatically select and play music tracks. Although discontinued, this project enhanced my experience in integrating computation techniques with media playback and server management.

11.2023 🗺️ **DogLog** | ***App*** | ***Closed source*** | ***discontinued***
Developed a mobile app using Android Studio designed for dog owners to log, monitor their pets' activities and find new friends. The app was developed to include features for tracking walks, feeding, veterinary appointments, and reminders, providing a comprehensive tool to enhance pet care while making finding people with similar interests easier.

10.2023 🏀 **BounceTales-based game** | ***Game*** | ***Closed source*** | ***discontinued***
Designed and developed an engaging 2D physics-based puzzle game basing on the Nokia BounceTales, utilizing Unity and C#. The game challenges players to navigate a bouncing ball through increasingly complex levels filled with obstacles and interactive elements. I focused on crafting intuitive controls, realistic physics simulation, and visually appealing effects to enhance the gameplay experience. Additionally, I implemented level progression, scoring systems, and responsive UI to ensure player retention and satisfaction.

03.2023 🗣️ **Speech Assistant** | ***Code*** | ***discontinued***
Developed a voice-controlled assistant running on Raspberry Pi, integrating multiple advanced features for hands-free user interaction. The assistant allows users to control music playback seamlessly via voice commands, engage in natural conversations with an AI GPT-based chatbot by passing voice input and receiving spoken responses, and monitor blood sugar levels through connected medical sensors. The project combines speech recognition, text-to-speech synthesis, real--time data acquisition from health devices, and AI-driven dialogue, resulting in a comprehensive, multi-functional personal assistant designed for convenience and health management. Project was built on top of Python language.