MATEUSZ BECLAWSKI

EMBEDDED SOFTWARE ENGINEER

https://www.linkedin.com/in/mateuszbeclawski/ | https://github.com/Leviathan-777 | https://leviathan-777.github.io

+48 576 512 559 | mbeclawski@gmail.com

PROFILE

As a dedicated Embedded Software Engineer with two years of hands-on experience, I bring a blend of technical proficiency and innovative problem-solving skills. My expertise lies in developing and optimizing embedded systems, ensuring the highest standards of performance, functional safety and reliability.

I have a solid background in C/C++ and Python programming, knowledge about RTOS and various microcontroller architectures, and experience in implementing different serial communication protocols such as CAN or SPI. I also have experience in the development of systems that meet industry standards such as ISO 26262 and ASPICE, which I'm applying in designing and implementing software for electronic control units. My work involves close collaboration with cross-functional teams to integrate software solutions that enhance vehicle safety, efficiency, and user experience.

In my current role, I have successfully contributed to several high-impact projects, including the development of control modules used for electric vehicles and the maintenance of electric control unit software for hybrid vehicles. My ability to troubleshoot complex issues, coupled with a keen eye for detail, allows me to deliver robust and scalable engineering solutions.

I am passionate about the future of automotive technology and continuously seek opportunities to expand my knowledge and skills. My goal is to contribute to the development of cutting-edge automotive innovations that drive the industry forward.

WORK EXPERIENCE

Embedded Software Engineer, Turntide Technologies

Gateshead, UK **10/2023 – Present**

- Designed, implemented, and maintained software for electric control units, using C, C++ and Python.
- Developed drivers for AB and UVW encoders that receive and process data to obtain dynamic parameters of the motor such as speed, angle and direction.
- Implemented and maintained communication protocols software (e.g., CAN, SPI, UDS) that led to seamless interaction between different components within the system.
- Designed software that adheres to functional safety standards relevant to the automotive and transport industries (e.g., ISO 26262, ASPICE) using strict development guidelines such as MISRA.
- Adopted test-driven development by conducting unit testing, integration testing, and validation of software components.
- Created and maintained detailed documentation for software requirements, design, and testing procedures.
- Contributed to the development and maintenance of CI/CD pipelines for existing codebases by using tools such as Gitlab.
- Worked closely with cross-functional teams to ensure consistent integration of software into the overall system.
- Analyzed and optimized software for resource utilization, power consumption, and system performance.

Software Engineering Intern, IBM Labs

Hursley, UK **06/2021 – 06/2022**

- Improved legacy code quality by identifying problematic areas, refactoring the code to follow modern standards, and implementing unit tests.
- Collaborated with cross-functional teams, including technical support engineers and QA engineers, to identify and troubleshoot complex issues.
- Utilized various diagnostic tools to debug software, effectively resolving technical problems.
- Contributed to the development of automated test scripts and integrated them with CI Pipelines.
- Attended bi-weekly stand-ups and collaborated with team members in sprint planning.
- Developed and maintained technical documentation, including troubleshooting guides and knowledge base articles, optimizing the efficiency of technical support teams.
- Contributed to one open-source project, helping with the development of a web application using technologies such as Python with Django framework, Docker and HTML/CSS.

EDUCATION

Computer Science BSc, Northumbria University

Newcastle Upon Tyne, UK **09/2019 - 06/2023**

- Awarded with BSc First Class Honours.
- Relevant coursework: Computer Networks and OS, Internet Of Things, Program Design and Development, Software Engineering Practice, AI and Robotics, Machine Learning and Computer Vision.
- Dissertation: Tumour status prediction in colon cancer with transfer learning using pathological tissue images
  - Technologies used: Python/TensorFlow/Keras/Pandas/Matplotlib/SciKit-learn/Numpy
  - The project consists of 9 different machine learning models where every model is a hybrid of a transfer learning model and a machine learning model. A transfer learning model was used for the feature extraction of histological images and a machine learning model was used to classify tumour status based on the extracted features.
  - Link to the project: https://github.com/Leviathan-777/MSI-MSS-tumor-prediction

SKILLS

Languages/Programming: C, Python, C++, Matlab, GDB, GNU Make, MISRA

Communication Protocols: CAN, SPI, I2C, UART, UDS

Development software: Jira, Git, Gitlab, SVN, Simulink, Polyspace, Polarion

Hardware: JTAG, Oscilloscope, Logic Analyzer, Multimeter

Operating Systems: FreeRTOS, Embedded Linux, Windows

Microcontrollers: Infineon TriCore, ARM, STM32

LANGUAGES

Polish	Native	**English**	Fluent	**German**	Beginner