CMake | JAVA | Gitlab | Git

SVN |  | Gen AI

Docker | PYTHON

CANoe | C | C++ | MATLAB

CAN | CAPL | Autosar | Simulink

NORBERT KORCZYŃSKI

Senior Software Developer

Berlin, Germany
nkorczynski@gmail.com

Skills

Programming Languages

C++, C, Python, MATLAB, CAPL, SQL, Java

Libraries & Frameworks

STL, Boost, pthreads, Rhapsody, Simulink, TargetLink, DaVinci Developer, DaVinci Configurator, FastAPI, Streamlit, Langchain, Google Test Framework, CMake

Tools & Platforms

Linux, Docker, Autosar Classic, CANoe, Candela Studio, Git, GitLab, IBM Rational DOORS, PTC, SVN, Jira, VS Code, MS Visual Studio, Eclipse, ClearQuest, Wireshark, MQTT

Overview

I am a highly motivated and ambitious individual with a lifelong passion for software programming. From the moment I created my first application as a teenager, I have found immense satisfaction in coding. I consistently set high standards for myself, ensuring that all tasks I undertake meet the industry's best practices. I prioritize writing robust, easy-to-understand source code that is optimized for performance on the target platform. Currently, I am focused on enhancing my skills in AI, Python, and modern C++, allowing me to adapt swiftly to new work guidelines and procedures. I thrive in multicultural environments and enjoy building connections with colleagues from diverse backgrounds. Outside of my professional life, I am passionate about sports, particularly football and other team activities, which further enrich my collaborative spirit.

Education

10.2009 – 06.2013 **Computer Science: Bachelor** West Pomeranian University of Technology in Szczecin

Artificial intelligence methods, Data analysis and machine learning, Robotics and digital automatic control, Simulation systems

Experience

SENIOR SW DEVELOPER 05.2020 – now GlobalLogic GmbH

❖ **06.2024 – now** **Gen AI: LLM Assistant**

I am currently developing a Generative AI LLM Assistant using Python, designing the architecture based on the microservice architecture pattern with separate, isolated containers to ensure that only the user-facing web GUI is accessible from outside. We utilize Streamlit for the GUI server, while employing FastAPI for the AI backend powered by Langchain. Additionally, we have a separate container serving the vector database, also using FastAPI for efficient data access. I incorporate data indexing and chunking as part of a Retrieval-Augmented Generation (RAG) solution. The language models are self-hosted within an Ollama container, allowing for secure and effective processing. This project is enhancing my skills in containerization, AI integration, and web development, contributing to a robust and user-friendly AI assistant solution.
Competences: GenAI, Python, Docker, Streamlit, FastAPI, Langchain, Git, Gitlab

❖ **03.2023 – 06.2024** **Electromobility: BMS HV**

In my role focused on the Battery Management System (BMS) for electromobility, I was responsible for monitoring high voltage levels, managing contact operations along the high-voltage line, and diagnosing their behavior under critical conditions. I participated in the architectural design of the system, which included adding and removing software components and modifying their interfaces using DaVinci. I also created detailed designs in Rhapsody, ensuring comprehensive documentation and alignment with project requirements.
To develop the designed modules, I utilized Simulink in MATLAB, employing TargetLink for C-code generation. Additionally, I conducted software testing in the high voltage laboratory and integrated automated tests in TPT, specifically for Model-in-the-Loop (MIL) and Software-in-the-Loop (SIL) testing. My contributions were pivotal in enhancing the reliability and functionality of the BMS, ensuring it met the stringent safety and performance standards essential for the electromobility sector.
Competences: Autosar Classic, RTE, DaVinci Developer, DaVinci Configurator, Matlab, Simulink, TargetLink, PTC, CAN, CANoe, IBM Rational DOORS

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❖ **09.2022 – 03.2023 Electromobility: BMS 12V**

In my role focused on the development of a Battery Management System for 12V batteries, I was deeply involved in both the design and implementation phases of the product. This included conducting thorough requirements engineering, where I created, edited, and reviewed system and software requirements. My work specifically targeted components that manage the operation of contactors and the logical states across the entire system, ensuring that all functionalities aligned with the highest standards of performance and reliability.
Competences: Autosar Classic, RTE, IBM Rational DOORS, Requirements Engineering

❖ **07.2020 – 06.2024 Electromobility: BMS HV**

In my role in the development of a Battery Management System, I focused on enhancing and expanding Simulink models responsible for key functions such as cell balancing, capacity, temperature, and voltage monitoring. I also contributed to software development in accordance with AUTOSAR standards, ensuring robust and efficient performance of the system. My work involved both the technical aspects of modeling and adherence to industry protocols, facilitating the creation of a reliable and high-performing battery management solution.
Competences: Autosar Classic, RTE, DaVinci Developer, DaVinci Configurator, Matlab, Simulink, TargetLink, PTC, CAN, CANoe, IBM Rational DOORS

APPLICATION DEVELOPER 10.2015 – 05.2015 Meelogic AG

❖ **10.2015 – 05.2020 Automotive: Touchscreen Panel**

In my role focused on the development of embedded systems for display and control devices, I was responsible for the software design and implementation of user interfaces using XAML, as well as middleware modules. I maintained and further developed a CAN diagnostic module, ensuring reliable communication and functionality. Additionally, I implemented automated tests utilizing C++11 features and the Standard Template Library (STL), and created Python scripts to support the continuous integration (CI) and system building process.
Competences: C++11, C, XAML, XML, UML, CAN, CANoe, Candela Studio, MS Visual Studio, Jenkins, Jira

JUNIOR SOFTWARE ENGINEER 09.2011 – 10.2015 Tieto Poland

❖ **12.2014 – 10.2015 Automotive: Infotainment**

In my role within an Automotive SPICE project, I was involved in the maintenance, design, implementation, and testing of software features for Electronic Control Units (ECUs). I contributed to the development of core diagnostic features for the ECUs and performed both automated and manual testing using the Vector CANoe tool with CAN interfaces. Additionally, I reviewed changes to the Component Design Document (CDD) files using Vector Candela Studio, ensuring compliance with project standards and quality requirements. My work helped enhance the reliability and performance of ECU software, contributing to the overall success of the project.
Competences: Automotive SPICE, C++, CANoe, Candela Studio.

❖ **02.2014 – 09.2014 BTS: Radio Frequency SW**

In my role focused on BTS Radio Frequency Software, I was responsible for the maintenance, design, implementation, and testing of RF software features within Radio Frequency Modules. I utilized the Google Test Framework to ensure robust testing processes and worked in an iterative development environment to refine and enhance software functionalities.
Competences used: Google Test Framework, Eclipse, Iterative development, CMake

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❖ **02.2013 – 12.2013 BTS: WCDMA OAM**

In my role within the BTS WCDMA OAM project, I worked in a Scrum environment focused on the maintenance, design, implementation, and automated testing of Base Transceiver Station (BTS) Operation, Administration, and Maintenance (OAM) features. I was responsible for creating automated module tests to ensure the reliability and performance of the software. Utilizing the Rhapsody framework, I contributed to software design and facilitated source code generation, which streamlined the development process and enhanced overall efficiency. My efforts helped deliver high-quality OAM solutions that met project requirements and industry standards.
Competences: Scrum, C++, STL, Boost and pthreads libraries, Rhapsody framework, UML, IBM Rational DOORS, Eclipse, Iterative Development.

❖ **09.2011 – 09.2012 VOIP**

In my role focused on the maintenance of a project supporting VoIP technologies, I was responsible for addressing existing bugs and developing new features within a standalone non-protocol service module. My work involved troubleshooting and enhancing the functionality of this module in a Linux embedded system environment. Additionally, I provided support to the SIP and H.248 (Megaco) area teams, collaborating to ensure seamless integration and performance of VoIP services. My contributions helped improve the overall reliability and capability of the system, aligning with project goals and user requirements.
Competences: C, C++, Linux, XML, MS Visual Studio, Eclipse, ClearQuest, Wireshark

Side projects

❖ **Homelab:**

- **Platform: Raspberry Pi**
  I developed a versatile platform using a Raspberry Pi, designed to host a range of services in isolated Docker containers for enhanced security and performance. This self-hosted server includes a Network-Attached Storage (NAS) system for efficient file management and a Smart Home setup utilizing Home Assistant. To ensure proper functionality of the smart home environment, I integrated Zigbee2MQTT, enabling seamless communication with various Zigbee devices. Additionally, I enhanced Home Assistant by incorporating Google Speech Services for voice control and the OpenAI API to create a language model assistant, allowing for intuitive interaction with smart devices.
  This project also features Pi-hole for network-wide ad blocking, a Media Player for entertainment, and is configured as a Surfshark VPN router for secure internet browsing. Engaging in this IoT industry project not only strengthened my skills in system architecture and containerization but also provided a practical solution for managing various digital services in a cohesive and intelligent manner.

Languages

Polish (Native), English (Fluent), German (B1)

Certifications

Machine Learning: Coursera - Credential ID F779LPLBKDV5