Bartomiej Kózka

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PROFESSIONAL EXPERIENCE

HID Global - Firmware Engineer Intern 01.2025-Present (9 months currently)

- **Signo Reader** project - secure access control software.
- Actively contributed to the full Scrum development cycle. **Implemented** inter-process communication using Protocol Buffers. **Designed and implemented** continuous integration (CI) pipelines.
- Technologies: C/C++, Python, UNIX, unit testing (CUnit), functional testing (pytest), Docker, Jenkins, low-level design

AGH Solar Boat Team - Software Engineer 04.2025-Present

- Developed software for an autonomous boat using ROS2, C++, and Python, with a scalable three-layer architecture for object clustering, sensor fusion, tracking, and obstacle avoidance.

EDUCATION

AGH University of Krakow October 2022 - Present
B.Sc. **Data Science**, 3-year GPA **4.75 / 5.0**

PERSONAL PROJECTS

Barkoz Tempo - Chess Engine 2025
Link https://github.com/bartlomiejkozka/Barkoz-Tempo

- Currently developing a **C++** chess engine based on the **Minimax algorithm** with **alpha-beta pruning** and **bit-board representation** for efficient state encoding.

Gear shift decision maker 2025
Link https://github.com/bartlomiejkozka/Gear-shift-FuzzyLogic

- Designed and implemented an **fuzzy logic** system in **C++** to simulate automatic gear shifting based on real-time inputs (velocity, RPM, throttle), using rule-based decision-making and defuzzification techniques.

Tiny Compiler - Pseudo-code compiler 2024
Link https://github.com/bartlomiejkozka/teeny-tiny-compiler

- Developed a lightweight pseudo-code compiler application using **Python** and **FastAPI** framework, structured as a **REST API** with integrated database functionality. Allows users to learn coding by writing, compiling, and executing pseudo-code, with script management and user accounts.

Data Science

Analysis of Bicycle Traffic on the Fremont Bridge in Seattle 2025
Link https://github.com/bartlomiejkozka/Fremont-bike-analysis

- Analyzed bicycle traffic data from Seattle's Fremont Bridge using **Python (Pandas, Matplotlib, Seaborn)** to identify temporal patterns and effectively communicate insights through visualizations.

Brenna Meteorological Data - EDA 2025
Link https://github.com/bartlomiejkozka/Brenna-meteorology-2020

- Performed **exploratory data analysis** on 2020 weather data from Brenna using pandas, matplotlib, seaborn to uncover seasonal patterns, correlations, and anomalies in temperature, humidity, and precipitation.

SKILLS

Python, R, C, C++, Bash, Algorithms and Data Structures, Data analysis & visualization, Feature engineering, Exploratory Data Analysis, Machine learning, Predictive analytics (regression, classification), Unsupervised learning (clustering), Multi-Threaded programming, SQL, UNIX Systems, TCP, UDP, Sockets and Networking Protocols, POSIX Libraries, gtest, CUnit, Docker, Jenkins, CMake, OOP and Design Patterns, Git, SonarQube Agile, Scrum, Jira, Ability to work on and debug unfamiliar code

LANGUAGES

English (C1), Polish (Native)

AGREEMENTS

I agree to the processing of personal data provided in this document for realising the recruitment process pursuant to the Personal Data Protection Act of 10 May 2018 (Journal of Laws 2018, item 1000) and in agreement with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).