Kilian van Berlo

Embedded Real Time Control Engineer

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Work Experience

Airbus Defence and Space *Munich, DE*

Embedded Software Engineer *August 2023 - Present*

- Successfully integrated control firmware and software onto target hardware, streamlining the development and deployment process.
- Developed and optimized safety-critical real-time software for embedded systems, ensuring compliance with aerospace standards.
- Debugged complex firmware and software issues and implemented memory optimization techniques to enhance performance.
- **Hard Skills:** ADA, Python, Assembly, Computer Architecture, HW/SW interfaces, Microprocessors, High-Speed Communication.

Young Creators *Amsterdam, NL*

Project Manager *November 2020 - October 2021*

- Led a team of 6 developers to create a scalable, hybrid event platform for the Young Creators community with 30K+ members.
- **Hard Skills:** Git, Prototyping, Agile Methodologies, Product Development, Project Coordination, Project Planning.

Nike *Amsterdam, NL*

Customer Insights Analyst *August 2018 - August 2019*

- Provided data-driven insights to leadership, informing the development of marketing campaigns that reached over 5MM customers.
- Analyzed over 100 million data points on Nike's digital platforms to identify key consumer trends.
- Developed dashboards to streamline reporting and visualize critical KPIs for decision-making, reducing reporting by 5+ hours/week.
- **Hard Skills:** Python, R, SQL, Amazon Web Services (AWS), Snowflake, Databricks, Tableau, Data Analysis, Data Visualization.

Education

Delft University of Technology *Delft, NL*

Master of Science in Embedded Systems *September 2020 - November 2022*

- GPA: 8.2/10.0
- **Thesis:** Developed a system for Tactile Internet to capture dynamic environments in real time.
- **Courses:** Embedded Firmware Engineering, Real-time Systems, Sensors & Actuators, Digital Signal Processing, AI, Networking, IoT.
- Mentored a group of 5 undergraduate students throughout their thesis, fostering their academic and technical development.

Eindhoven Unversity of Technology *Eindhoven, NL*

Bachelor of Science in Innovation Sciences, Psychology & Technology - Robotics *September 2015 - March 2020*

- GPA: 7.6/10.0
- **Thesis:** Investigated the impact of monetary incentives on user trust and adoption of AI-powered recommendations.
- **Courses:** Artificial Intelligence, Signals, Circuits, Control Systems, Hardware/Software interface, Linear Algebra, Data structures.
- Taught Object-Oriented Programming (OOP) in Python to 100+ students, fostering their skills and passion for technology.

Projects

Real-Time 3D Object Tracking for Tactile Internet *Delft, NL*

Delft University of Technology *February 2022 - November 2022*

- Designed algorithms for accurate real-time 3D object detection and tracking, enabling innovative tactile internet applications.
- Enhanced the tracking capabilities of the open-source Point Cloud Library by 100%, enabling it to track in all 6 Degrees of Freedom.
- **Hard Skills:** C++, TCP/IP, Debugging, Testing, Machine Learning, Haptic Communication, Real-time Systems, Computer Vision.

Privacy-Aware Device-Free Low-Power Occupancy Detection *Delft, NL*

Delft University of Technology *December 2021 - March 2022*

- Developed software for a low-power, privacy-preserving occupancy detection system using thermophile and PIR sensors.
- Implemented 5+ image processing algorithms for accurate visual tracking, enhancing detection accuracy.
- **Hard Skills:** C, C#, Python, MQTT, Computer Vision, Azure IoT, Internet of Things, Sensor Calibration, Real-Time systems.

Brain Controlled Swarm Robotics *Delft, NL*

Delft University of Technology *August 2021 - December 2021*

- Developed a robust system architecture utilizing 3 distinct communication protocols for effective swarm communication.
- Created algorithms for real-time EEG and EMG signal processing and translation into control instructions.
- Implemented obstacle avoidance mechanisms using infrared and ultrasound sensors.
- **Hard Skills:** C, C++, Python, UART, Microcontroller, Brain Computer Interface, Communication Systems, Embedded Firmware.

Vision-Guided Cyber-Physical System *Enschede, NL*

Twente University *May 2021 - July 2021*

- Designed a vision-guided cyber-physical system, integrating image tracking, motor control, and communication subsystems.
- Successfully implemented and validated all subsystems, ensuring robust and reliable operation.
- **Hard Skills:** Linux, C, VHDL, Python, Microcontrollers, FPGA, JTAG, Image Processing, Design Space Exploration, Control Firmware.