Kilian van Berlo

EMBEDDED SOFTWARE ENGINEER

📱 +31611060198 | ✉ k.v.berlo@outlook.com | 🏠 www.kilianvanberlo.com | 🐙 github.com/KilianBerlo | 💼 linkedin.com/in/kilianvanberlo

Personal Profile

Hi, I'm Kilian, an explorer, engineer, and creator passionate about pushing the boundaries of human potential through cutting-edge technology. With a solid academic background in Embedded Systems and Psychology & Technology, I bring a unique perspective to problem-solving in the tech field. Alongside my educational background, my hands-on experience at several companies has honed my skills in project management, big data analysis, software engineering, and UX research. Today and tomorrow, I'll continue to nurture my passion for exploring all the weird, wild, and wonderful challenges this world throws us. By being in the know, creative, and, above all, curious, I'm staying connected to my mission to develop revolutionary new technologies which lead to unique solutions for the benefit of the greater good.

Education

Delft University of Technology
Delft, NL

MSc in Embedded Systems
September 2020 - November 2022

- GPA – 8.2/10.0
- **Thesis:** Capturing real-time dynamic environments for Tactile Internet, conducted at the Embedded and Networked Systems group.
- **Courses:** Embedded Computer Architecture, System Validation, Quantitative Evaluation of Embedded Systems, Real-time Systems, Embedded Systems Design, Sensors & Actuators, Digital Signal Processing, Algorithms, Artificial Intelligence, Networking, Internet of Things .
- Led the student accreditation committee of 8 students for the Embedded Systems and Computer Science programs.
- Mentored a group of 5 Bachelor Students throughout their dissertation.

Eindhoven Unversity of Technology
Eindhoven, NL

BSc in Innovation Sciences, Psychology & Technology - Robotics
September 2015 - March 2020

- GPA: 7.6/10.0 - Graduated with great appreciation
- **Thesis:** The effect of monetary incentives on the trust in and use of model-based advice.
- **Courses:** Programming, Artificial Intelligence, Computer Graphics, Signals, Control Systems, Hardware/Software interface, Computer Science Fundamentals, Linear Algebra, Data structures, Qualitative and Quantitative Research Methods, Psychology, User Experience Design Methods .
- Co-founded a committee of the study association and led 3 others, all with a minimum of 6 students.
- Coached 2 groups of 10 students throughout their first year at university.
- Taught 100+ students Object-Oriented Programming (OOP) in Python.

Work Experience

Airbus Defence and Space
Munich, DE

Embedded Software Engineer
August 2023 - Present

- Developing and designing safety-critical real-time software for embedded systems.
- Coding, integrating, and rigorously testing software directly on target hardware prior to making software airborne.
- Debugging complex issues and optimizing code for memory-constrained environments.
- **Hard Skills:** ADA, Assembly, Python, Real-Time Operating Systems (RTOS), Embedded Systems, Safety Critical Software, Systems Thinking

Young Creators
Amsterdam, NL

Project Manager
November 2020 - October 2021

- Managed a group of 6 to organize a week-long event for 1500+ young entrepreneurs and makers.
- Coordinated the development of a hybrid event platform to host events for the Young Creators community with over 30K members.
- **Hard Skills:** Git, Prototyping, Agile Methodologies, Product Development, Project Coordination, Project Planning.

Nike
Amsterdam, NL

Customer Insights Analyst
August 2018 - August 2019

- Presented data-driven insights to senior leadership, informing the development of multiple marketing campaigns reaching over 5MM customers.
- Identified main trends in consumer behaviour by analyzing over 100MM data points on Nike's digital platforms.
- Reduced manual reporting time by 5 hours per week by building Tableau dashboards to visualize customer insights KPIs.
- **Hard Skills:** Python, R, SQL, Amazon Web Services (AWS), Snowflake, Databricks, Tableau, Data Analysis, Data Visualization.

DigiReady
Eindhoven, NL

User Experience Designer
January 2019 - March 2019

- Devised educational games for an online learning package, introducing over 3K high school students to computational thinking.
- **Hard Skills:** Adobe Illustrator, User Experience Design, Prototyping, Wireframing, Product Development, Game Design, User-Centered Design.

Blue Jay Eindhoven
Eindhoven, NL

Software Engineer
November 2017 - July 2018

- Engineered novel algorithms for indoor drone navigation, enabling the drone to fly autonomously in static environments for the first time.
- Collaborated with a 4-person team to improve the Robotics Operating System (ROS) Architecture, resulting in a modular and scalable system.
- **Hard Skills:** Prototype Development, C++, Python, Git, Embedded Software Development, Algorithms, Linux, Remote Autonomous Robots.

Blue Jay Eindhoven
Eindhoven, NL

Interaction Design Researcher
June 2017 - December 2017

- Improved communication between cross-functional teams, resulting in significantly better alignment in the prototype development process.
- Conducted UX research, leading to the identification of key user pain points and requirements for autonomous drones in the healthcare industry.
- **Hard Skills:** Qualitative User Research, Persona Development, Persona Validation.

Dutch Coding Company
Eindhoven, NL

Full Stack Web Developer
May 2016 - May 2017

- Developed 4 fully functional and responsive websites from scratch, delivered on time and within budget.
- Collaborated with UX/UI designers to translate wireframes into pixel-perfect designs, resulting in 100% stakeholder satisfaction.
- **Hard Skills:** WordPress, HTML, CSS, JavaScript, PHP, Laravel, MySQL.

Freelance
Eindhoven, NL

Front-End Web Developer
December 2015 - May 2016

- Developed the front-end of 2 websites from scratch, delivered on time and within budget.
- Collaborated with UX/UI designers to develop user-centric and visually appealing interfaces, resulting in 100% stakeholder satisfaction.
- **Hard Skills:** WordPress, HTML, CSS.

Projects

Capturing Real-Time Dynamic Environments for Tactile Internet
Delft, NL

Delft University of Technology
February 2022 - November 2022

- Pioneered creating a virtualization system for tracking objects in 3D in real-time, enabling tactile sensing of a remote environment.
- Assisted in designing collision detection algorithms tailored to Tactile Internet in a 3-person team.
- **Hard Skills:** Linux, C++, Git, TCP/IP, Performance Analysis, Debugging/Testing, Computer Graphics, Real-time Systems, Computer Vision.

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

Delft University of Technology
December 2021 - March 2022

- Investigated the usage possibilities of thermophile and PIR sensors for indoor occupancy detection.
- Utilized 5+ image processing algorithms for visual tracking of people in the same environment.
- Established an MQTT connection to send occupancy information to an Azure IoT Hub, enabling seamless integration with other smart systems.
- **Hard Skills:** Matlab, C, C#, Python, MQTT, Computer Vision, Azure IoT, Internet of Things, Sensor Calibration, Real-Time systems.

Towards Brain Swarm Interfaces
Delft, NL

Delft University of Technology
August 2021 - December 2021

- Defined the communication architecture, combining 4 different protocols required to control a swarm through a Brain-Computer Interface (BCI).
- Developed a program to process the EEG and EMG signals received from the brain and translate them to 5 different control instructions.
- Coded an obstacle avoidance algorithm for the swarm robots based on input from infrared and ultrasound sensors.
- **Hard Skills:** C, C++, Python, Computer Vision, Sensor Calibration, Brain Computer Interface, EEG, EMG, Embedded Software.

Vision in the Loop
Enschede, NL

Twente University
May 2021 - July 2021

- Explored the design space for each subsystem (quadrature encoder, PWM, motor controller, image tracking, communication) based on 5 criteria.
- Implemented, tested and debugged every subsystem of the cyber-physical system in collaboration with one person.
- **Hard Skills:** Linux, C, VHDL, Python, FPGA, UART, Linux, Image Processing, Design Space Exploration, Embedded Control Engineering.

Microphone Echo Filter
Enschede, NL

Twente University
May 2021 - July 2021

- Engineered an echo cancellation application on a Raspberry Pi together with one other person, allowing for real-time audio input processing.
- Implemented partitioning of the program into multiple parts to enable parallel processing of tasks.
- **Hard Skills:** C++, CMake, Real-Time systems, Parallel Computing, Microprocessors .

Battery Aware Experiment Scheduling
Enschede, NL

Twente University
November 2020 - February 2021

- Developed a cost-optimal reachability model checker with a team of 3 to generate battery-aware schedules for the GOMX-3 nanosatellite.
- Created 10 timed automata models for extensive testing and debugging of the model checker to ensure accurate and reliable results.
- **Hard Skills:** Python, Modest, Modeling, Quantitative System Evaluation.

Humans and Algorithms Detecting Fake News: Effects of Individual and Contextual Confidence on Trust in Algorithmic Advice
Eindhoven, NL

Eindhoven University of Technology
October 2019 - August 2020

- Examined the performance of detecting fake news with algorithmic advice using data from 100+ participants and 160 news stories.
- Discovered that willingness to accept advice decreases with self-confidence in an initial assessment, but this effect is contextual, not individual.
- Collaborated in a 4-person team to outline the implications of the findings and provided general guidelines for human-algorithm interaction.
- **Hard Skills:** LaTeX, Stata, Quantitative Research, Data Analysis.

Space Invaders 2

Eindhoven University of Technology

Eindhoven, NL

November 2019 - February 2020

- Collaborated in a 5-person team, implementing computer graphics and artificial intelligence techniques into a first-person shooter video game.
- Developed a Single Shot Multibox Detector neural network using hand-generated training data resulting in improved object detection.
- Utilized a search algorithm to facilitate fast and efficient entity movement in the game.
- **Hard Skills:** Linux, Java, TensorFlow, OpenGL, Computer Vision, Deep Learning, Computer Graphics.

USB Sticks Web Shop

Gigabitz

's-Hertogenbosch, NL

March 2019 - February 2020

- Built and designed a fully functional e-commerce store selling 30+ comical USB sticks.
- Implemented Agile methods such as Scrum and Kanban to ensure timely delivery while maintaining quality and minimizing technical debt.
- **Hard Skills:** WordPress, HTML, CSS, PHP, Adobe Illustrator, Adobe Photoshop, Shopify.

Online Secured Cloud Backup

OnlineBackuppen

Eindhoven, NL

September 2016 - August 2018

- Created and operated an e-commerce store in a 2-person team that generated more than €250,- of monthly revenue from 50+ customers.
- **Hard Skills:** WordPress, HTML, CSS, PHP.

Achievements

'18 - '22	**T500**, The definitive list of the Netherlands' 500 most inspiring talents under 26s across all fields of digital.	*Netherlands*
'17	**Track winner**, Winner out of 50 teams partaking in the entertainment track of Junction Helsinki, Europe's leading hackathon, with our concept 'Spotify Crowd', Spotify for nightlife.	*Finland*
'17	**Track winner**, Winner out of 10 teams partaking in the E-commerce track of HEX Eindhoven, Eindhoven's leading hackathon, with our concept 'WehBo', a robotic shopping assistant.	*Netherlands*

Publications

JOURNAL ARTICLES

Humans and Algorithms Detecting Fake News: Effects of Individual and Contextual Confidence on Trust in Algorithmic Advice
  Chris Snijders, Rianne Conijn, Evie Fouw, Kilian Berlo
  International Journal of Human–Computer Interaction (July 2022) pp. 1–12. 2022

Languages

Dutch	Native proficiency
English	Bilingual proficiency
German	Professional working proficiency