



# Max Kivits

Robotics engineer with expertise in embedded systems, control theory and software engineering. Passionate about collaborative, growth-oriented teams and developing innovative solutions to problems that matter. Enthusiastic about leveraging modern tools like embedded Rust and Nix.

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## Work Experience

2022 - 2024 **Embedded Software Engineer** - Nefit Bosch Deventer

- Developed C++17 firmware (STM, Renesas) for Cortex-M4 hardware using EmbOS RTOS.
- Built and maintained drivers for GPIO, ADC, UART, SPI, I2C, and the LIN and CAN stacks.
- Designed firmware and hardware for integration testing on a Jenkins-based CI/CD server
- Contributed to a Windows firmware simulator using a x86 EmbOS simulation library.
- Reconciled git forks and promoted code quality through reviews and pair programming.
- Expanded the Linux/WSL dev tooling and CMake build scripts

2022 **Embedded Software Consultant** - SFC Energy Almelo

- Developed a C# library implementing a custom serial communication protocol to interface with industrial power supply units
- Worked on a C#11 .NET MAUI GUI application which uses above library to greatly reduce power supply configuration time in production

2022 - 2024 **Embedded Software Engineer** - Engineero

- Presented the advantages of using modern C++ over C for firmware development

2022 **Robotics Developer** - Teqram

- Developed and maintained software for an ABB IRB 7600 to automate metal part handling with magnetic grippers, utilizing C++ and Lua.
- Improved factory inventory tracking by building a Java Android app for barcode scanners that communicate with C++/Lua UDP server.
- Extended legacy C++ CRM, quoting, and management software using the QT4 framework.

2020 **Control Engineer Internship** - Corvus Drones

- Developed the landing procedure for an autonomous greenhouse monitoring UAV using VIO.
- Worked on the path finding and sensor fusion software using C++ and ROS 1.

## Education

2019 - 2022 **Msc Electrical Engineering** - University of Twente

- *Specialisation:* Robotics and Mechatronics
- *Thesis:* Researched and worked on a state of the art Nonlinear Model Predictive Controller to control a group of heterogeneous UAVs to collaboratively measure the state of a target object using an Extended Kalman filter. The controller is built on the Genome framework in Python and C++. The controller uses a model that captures the full nonlinear dynamics of the UAVs and outputs low-level actuator inputs for each of the UAV rotors. [Open access](#)
- *Subjects:* Modern Robotics, Optimal, Robust & Nonlinear Control Theory, Machine Learning, Computer Vision, C++, Python

2014 - 2018 **Bsc Electrical Engineering** - University of Twente

- Thesis: Machine Learning - CNN for melanoma detection using data augmentation and transfer learning, built in MATLAB
- Subjects: Circuit Analysis, Signal Processing, Control Theory