Application for the Smart Industrial Robotic Systems Research Engineer Position

m.p.w.kivits@gmail.com | +31620434360 | linkedin.com/in/max-kivits | github.com/maxkiv | 29 years old | Dutch

Mon Jan 13 2025

Dear Gerdine Meijer,

I am excited to apply for the Smart Industrial Robotic Systems Research Engineer position at Saxion's SMART research group. In order to obtain more practical knowledge I have chosen to work in industry after my Masters 3 years ago. Although I have gained valuable experience, I have sometimes missed the focus on curiosity, novel research and societal impact that academia offers. When I learned of Saxion's SMART lab and its mission to bridge the gap between fundamental research and industry to help solve urgent societal challenges, I realised this is exactly what I am looking for. Your focus on sustainability, extensive test labs and interaction with students only increase my excitement to be part of your amazing group.

I love working on problems that cross disciplines, as evidenced by my studies, personal projects and varied professional experience. During my thesis I worked on controlling a heterogeneous fleet of generic multirotor UAVs using Nonlinear Model Predictive Control to cooperatively estimate the state of a target object using a Kalman filter. Within 6 months I was able to dive into and advance this state-of-the-art control theory, collaborate with others to turn ideas into the movement of real physical systems and present my findings to a varied audience. Estimating the target object state using a Kalman-type filter and calculating optimal sensing trajectories present similar challenges to the vision and path planning work required for industrial robotics.

I like to drop into new projects and collaborate with others to figure out how everything connects. At Nefit Bosch, I collaborated with others to develop firmware and hardware for various Cortex-M4 microcontrollers, interfacing with a variety of sensors and communication stacks. This experience in hardware-software integration and collaborative development will be useful in the setting of your SMART lab. At Teqram, I developed and maintained C++/Lua software for an ABB IRB 7600 industrial robot arm with a structured light camera and magnetic gripper to automate metal part handling. This work yielded broad experience across the robotics stack, which will be useful when working on the integration challenges that any industrial robot is sure to pose.

My continuous desire to learn drives personal projects, such as exploring Async Embedded Rust for sensor and actuator interfacing, using Nix for reproducible tooling, and designing a custom split keyboard with a PCB and firmware integration. These projects demonstrate my desire to learn about modern development tools, embedded systems and hardware-software integration, which are directly applicable to industrial robotics.

I'm interested in all 4 robotics research engineer vacancies at your lab. I would gladly meet to further explain my motivation and discuss together which position is best suited. This position specifically interests me because it closely relates to previous robotic manipulator work I have done and would allow me to continue my development as a robotics engineer while exploring more about reinforcement learning.

As I'm currently abroad, I'm looking for a position when I relocate back to Enschede around March 2025. My timezone for January is NZDT (GMT+13), and AWST (GMT+8) during February. I hope it is possible to conduct any interviews digitally until I return to the Netherlands!

I sincerely hope you will consider me for this position, I would love to be part of your amazing mission and believe I can contribute meaningfully!

Sincerely,

Max Kivits