Application for the Unmanned Robotic Systems Research Engineer Position

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Dear Gerdine Meijer,

I am very excited to apply for the Unmanned 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've gained valuable experience, I've 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. The job description mentions controlling a fleet of drones to collaboratively work on tasks. This very closely relates to my master thesis, where 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.

I like to drop into new projects and collaborate with others to figure out how everything connects. At Nefit Bosch, I developed firmware and hardware for embedded systems, working with Cortex-M4 microcontrollers and interfacing with a variety of sensors and communication stacks. I'm excited to apply this expertise in integrating hardware & software systems to the challenges of autonomous navigation of unmanned robots. 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 allowed me to gain experience with various levels of a robotics stack, which will be useful when working on the integration and implementation of unmanned robotic systems.

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 autonomous 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 work I have done before and would allow me to further specialise in collaborative swarm control.

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). I hope it is possible to conduct any interviews digitally.

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