NATURE ROBOTS
www.naturerobots.com

Working Student Autonomy Integration – Steering Kit for Tractor Retrofit (f/m/d)

Working Student, Osnabrück (hybrid possible, close on-site collaboration for field tests)

About Nature Robots

Nature Robots is a disruptive robotics and AI startup dedicated to transforming agriculture through innovation. We are developing our Farming Autonomy OS – a hardware-agnostic, compliance-by-design platform for autonomous navigation of agricultural machinery and robots – supporting regenerative and sustainable farming in the face of climate change, population growth, and the need for local food production.

The Background

We are strategically expanding our Autonomy OS into the retrofit market for tractors and self-propelled machines: using a retrofittable steering kit, existing vehicles are meant to become semi-autonomous – with the driver increasingly taking on the role of a safety officer who supervises the system rather than actively steering.

The Opportunity

As a **Working Student Autonomy Integration** you will analyze and implement the integration of our existing Autonomy Stack with a market-available steering kit. Within a few weeks, you will determine whether compatibility is possible without major changes – your findings will form the basis for deciding whether we purchase the steering kit to further drive the integration.

Your Role

- **Interface & Compatibility Analysis:** Analyze the hardware and software interfaces of the steering kit (CAN/CANopen communication, steering angle sensing, actuator control) and compare them against the requirements of our Autonomy Stack.

- **Prototype Integration:** Integrate the steering kit into our existing Autonomy Stack and ensure the steering is controlled through our software.
- **Field Testing:** Conduct tests on a test vehicle to validate steering accuracy, response time, and reliability of the integration under real field conditions.
- **Gap Analysis & Documentation:** Identify necessary adaptations to the stack or the kit and document technical limitations as well as possible solutions.
- **Decision Memo:** Based on your findings, develop a well-founded purchase recommendation (go/no-go), including an effort estimate for further integration.
- **Collaboration:** Work closely with our autonomy software and mechatronics teams, aligning on test results and next steps.

What You Bring

- Enrolled student (Bachelor's or Master's) in Mechatronics, Electrical Engineering, Computer Science, Robotics, or a related technical field.
- Initial experience with ROS/ROS2 and integrating hardware into existing software architectures.
- Knowledge of vehicle bus systems (CAN, CANopen; experience with ISOBUS/ISO 11783 is a plus).
- Basic understanding of control theory (e.g., closed-loop steering control) desirable.
- Programming skills in C++ and/or Python.
- Hands-on mentality and a structured, independent way of working – you're comfortable making solid decisions under a tight timeline.
- Driver's license class B (class T a plus) for field tests.
- Experience with embedded systems or agricultural robotics is a plus but not required.
- Passion for autonomous systems and sustainable agriculture.

Our Offer

- A **meaningful role** in a project with direct strategic influence on the direction of our Autonomy OS.
- **No corporate politics:** short decision-making paths, real responsibility from day one, and an extremely steep learning curve.

- **Flexibility & trust:** flexible working hours around your studies and a culture built on trust rather than micromanagement.
- **Direct exposure** to hardware-software integration and real test vehicles – not just theory.
- **A meaningful role** in a pioneering agri-tech startup making a real-world impact.
- **Potential for continued employment**, provided the project and collaboration are a good fit.

📥 **Interested?** Send us your application (cover letter, CV) at **career@naturerobots.com** 🚀