



A software prototype for locating vehicles and managing telematics hardware is to be further developed and new use cases considered in order to finally integrate the code into existing software.

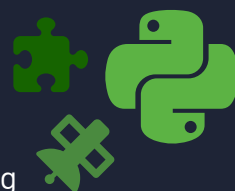


The task can be worked on alone or in a team. More about the specific task description on page 2.

### Required



- Advanced knowledge in Python
- Fundamental knowledge of (REST) APIs
- Fundamental knowledge in field of signal processing
- Independent and result-oriented approach to work



### Desired



- Experience in agile software development in a team
- Experience with web development in Angular/Typescript
- Knowledge of MQTT, Data Streams, WebSockets
- German language skills



### What we offer...

- A young team that lives and works according to the motto "learning by doing"
- A scalable task scope according to team size and areas of interest
- An exciting complex of topics where software meets hardware
- Provision of required background knowledge, continuous feedback and telematics and IoT hardware
- Experience in complete lifecycle of software engineering, from prototyping to integration

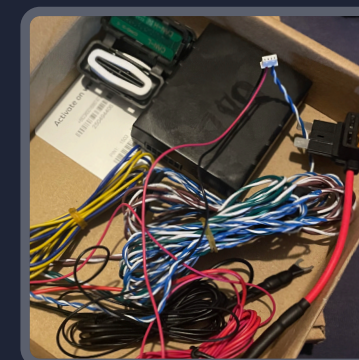


SKYTREN IS A YOUNG STARTUP FROM MUNICH IN THE PRE-SEED PHASE, THE FOUNDING TEAM CONSISTS OF A COMPUTER SCIENTIST, MEDIA COMPUTER SCIENTIST AND CIVIL ENGINEER THAT CAME TOGETHER IN SPRING 2021. WE ARE DEVELOPING A CLOUD-BASED SOFTWARE SOLUTION FOR THE DIGITALIZATION OF SMALL AND MEDIUM-SIZED CONSTRUCTION AND CRAFT COMPANIES TO CONTRIBUTE OUR PART TO THE DIGITAL TRANSFORMATION OF THIS SECTOR. CURRENTLY, OUR SOFTWARE IS IN USE AT THREE TEST COMPANIES IN THE DACH REGION WITH WHOM WE ARE CONSTANTLY DEVELOPING OUR SOLUTION. WE ARE LOOKING FORWARD TO PUSH THE TOPIC OF FLEET MANAGEMENT WITH YOU IN THE COMING SUMMER SEMESTER.

## Task Description

A software prototype for locating vehicles and managing telematics hardware is to be further developed and new use cases to be considered in order to finally integrate the code into existing software. The following procedure is planned from our side:

1. Addition of minimum requirements to the MVP, such as user authentication and conversion of websockets to an MQTT broker.
2. Development of a digital driver's logbook based on location data, motion sensor data and CAN data.
3. From here on you can choose in consultation with us in which direction you want to go. Possible topics are:



- Route planning and optimization in real time e.g. with Google Maps
- Allocation of vehicles and optimization of vehicle utilization
- Integration of BLE beacons for asset tracking, vehicle inventory monitoring
- Automated vehicle safety and driver safety
- Detection of fleet condition based on vehicle data / prediction of maintenance needs using machine learning
- Optimization of existing data streams
- Data mining, determine meaningful KPI's to output statistics / explore ML potentials
- ...Your own ideas that fit within the greater concept

4. Finally, you will have to prepare your project in such a way that it can be integrated into the existing software.

No matter in which direction you want to develop yourself and whether alone or in a team, with us will find the opportunity to do so.

The existing prototype was created in Python with FastAPI as framework, our production software in Angular / Typescript. You can decide in which of the two frameworks you want to implement the project.

If you have any questions, just send an email to [contact@skytren.de](mailto:contact@skytren.de) We are looking forward to you!

