SeaUrchin: Development of performance sensor feedback for wearable surf tracker

Code: 20/32

Company: Kittiwake Labs Ltd

Location: Porthtowan / Redruth, Cornwall (possibility to work remotely)

Company Description:

Kittiwake Labs Ltd (http://kittiwakelabs.com/) is a Cornwall based tech start-up focusing on developing innovative solutions to real world challenges in the sports industry. Kittiwake brings together expertise in Big Data, Software Development, Space and GIS technologies, and Internet of Things. We are particularly focused on software development related to Earth Observation (EO) and geospatial technologies and are currently developing a novel surf tracking device called the SeaUrchin.

Project Description:

The SeaUrchin surf tracker tool is an exciting and ground-breaking innovation. It is a wearable tracker being developed with enhanced GNSS capabilities. The team have completed technical and market feasibility testing and are now carrying out prototype testing and service development.

Over the course of the placement, the candidate will help develop new data analysis and processing techniques based on the measurements acquired by the SeaUrchin device. Specifically working with the two technical directors, the successful applicant will be expected to use state-of-the-art signal and data processing approaches to filter and classify the SeaUrchin data using both position and movement data to deliver surf related statistics and movement information.

The work undertaken will focus principally on exploration of data processing and interpretation of the sensor outputs, but will also include tasks such as a literature review, testing cycles, evaluation and documentation of outcomes, and knowledge transfer / exchange between the student and the Kittiwake team. The project will be fast paced and well structured, and we look forward to welcoming the successful applicant into our team for the duration of the exercise.

Applicant Specification:

Kittiwake Labs are looking for applicants in the areas of Computer science, Electronic Engineering, Physics, Mathematics, or Physical Geography or similar. Both university and college students would be considered for this position depending on their experience and skills.

We would like the candidates to demonstrate knowledge and experience of the minimum requirements and ideally a number of the preferred requirements.

Kittiwake Labs Ltd currently employs three people located in Cornwall and Oxfordshire. However due to the current Coronavirus situation remote working is key. With this in mind, we are keen to hear from applicants with excellent communication skills and the ability to work autonomously, as well as demonstrating the required technical skills.

Technical Skills

Depending on the background of the student applicant, it is expected that a number of technical skills will be required / developed:

- Data processing approaches and classification methods;
- Software prototyping;
- Reading and reviewing technical documentation and presenting to the team;
- Data cleaning/manipulation and geospatial analysis.

Minimum Requirements:

- Interest and good understanding of approaches in working with location and sensor data and data processing.
- Data manipulation experience.
- Basic programming knowledge and experience.

Preferred Additional Requirements:

- Digital Signal Processing - knowledge, understanding and ideally some experience, of the principals of DSP.
- An understanding of Copernicus Galileo GNSS and augmentation;
- Programming experience in Python (or similar).
- Experience of building basic electronics hardware using development platforms, e.g. Arduino, Raspberry Pi, etc

Further details:

Additional resources to be provided by Kittiwake Labs include:

- Access to cloud computing resources for software development and data processing;
- Electronic hardware parts and prototype SeaUrchin device;
- Hotdesk in Cornwall available at Kittiwake office in Pool Innovation Centre, dependent on lockdown and social distancing guidelines;
- Possible extension beyond 8 weeks depending on project outcomes.

We offer an 8 weeks fixed term contract to be agreed with successful candidate but nominally with a start date after 17 June 2020 after the SPIN Induction day held by the Satellite Applications Catapult, and completion before 20 September for the Showcase the following week. Salary is £1,500 per calendar month gross (maximum gross value of contract is £3000).

Closing Date for Applications: 5pm Wednesday 10 June 2020

Applications should be made through the online form and attaching a CV, before the closing date. Please note that elements of the form left incomplete will be deemed to render the application ineligible. They will be checked for eligibility and forwarded to the employer.