

Satellite Operations Monitoring and Automation

Code

20/04

Company

Satellite Applications Catapult, Access to Space Value Stream

Location

Harwell Campus, Didcot

Project Description

The SPINtern will spend their 8 weeks implementing a web-based dashboard solution for monitoring live ongoing satellite operations as part of the Satellite Applications Catapult's [In-Orbit Demonstration](#) series of CubeSats. Depending on progress, stretch activities could include improvement of ground scripts that automate interactions with the satellite (in the Groovy language within the [Bright Ascension Ground Control Software](#)) or optimisation of an existing data processing chain in Python.

The core activity will be selecting, specifying, configuring and deploying a solution based upon open source software that aggregates logs and performance data from both live satellites and the ground segment (ground stations, IT infrastructure etc.). This data should then be automatically monitored for errors or out of bounds readings, and alerts generated to notify satellite operators, and summaries provided on a web-based dashboard. Initially example logs and data will be provided to work with but following successful testing in a development environment it is hoped that the solution can be rolled out to live satellite operations during the internship.

From undertaking this project, the applicant will gain the following skills and experience:

- Working as part of a multi-disciplinary team as part of live ongoing satellite operations
- Working in an Agile development methodology
- Opportunities to present and communicate your work with others

Applicant Specification

The applicant should be pursuing a degree in Computer Science, Engineering, Physics or similar technical subject and be interested in the software side of satellite operations and space missions. Any software development, testing and deployment experience is advantageous as this will be a primarily software-based internship. A broad understanding of satellites, their subsystems and how they function is useful, but not essential.

Minimum Requirements

- Experience developing software using source and version control (e.g. Git)
- Experience using Linux based operating systems and the command line.
- A basic understanding of Docker and deploying services with it.

Preferred Additional Requirements

- Experience with the ELK (Elasticsearch, Logstash, Kibana) stack, Grafana, InfluxDB or similar log aggregation, monitoring and graphing tools.
- Experience with the Groovy or Python languages.
- Knowledge and understanding of satellites, their constituent subsystems and basic functions

Application Closing Date

5pm Monday 9 March

Interview Dates

19 & 20 March and 23 & 24 March

While sending in your applications, ensure you will be available for an interview for the days mentioned above.

Start date & salary:

The internship is for 8 weeks fixed term contract starting on 15 June 2020 and the salary is £1,500 per calendar month. The SPIN induction day will be on the start date.