

Development of Satellite Orbital Flight Simulator

Code: 20/28

Company: Magdrive

Location: Westcott Venture Park

Company Description:

Magdrive is developing the next generation of space propulsion for small satellites. This system will offer the high efficiency of electric propulsion while providing the high thrust produced by chemical propulsion systems which still dominate the market. This will allow for extended small satellite lifetimes, and for new mission types such as rendezvousing with larger satellites, constellation management, and deorbiting. The small size of the Magdrive thruster will allow for small satellites to be used for significantly more applications, reducing the cost of space applications and the barriers to entry to this industry. This will allow smaller companies, start-ups and universities to conduct missions in space on smaller budgets, helping to drive UK innovation in space.

Project Description:

To better access the value added by the Magdrive thruster, we wish to develop a system code that can simulate a satellite mission in low Earth orbit. This simulation will be able to model multiple propulsion systems, power systems and other space hardware. The software will be developed in Python (with some modules potentially developed in C++). The successful applicant will have a lot of freedom in the design and development of this simulation software. This project will last 8 weeks and comes with a stipend of £375 per week.

Magdrive is therefore looking for students who are able to drive the project forward themselves. The student will work with senior developers at Magdrive who will guide the student on good coding practises and software development in a professional environment. The internship will take place at the Westcott business incubation centre, near Aylesbury. Remote working is welcome during the project, which may be beneficial due to the spread of COVID-19. However, the student will need to stay in regular contact with their supervisor and ideally meet face to face several times throughout the project.

Applicant Specification:

Academic: Currently studying a degree in maths, physics, engineering or aeronautics.

Minimum Requirements:

The applicant requires a basic knowledge of Python or C++.

Preferred Additional Requirements:

The applicant would ideally have experience with writing simulation software, object-oriented programming and git version control. Buses from Aylesbury are available, but the applicant would benefit from access to a car.

Further details:

8 weeks minimum fixed term contract to be agreed with successful candidate but nominally with a start date around 15 June 2020 to attend the SPIN Induction day at the Satellite Applications Catapult, and completion before late-September for the Showcase the following week. Salary is £1,500 per calendar month gross.

Closing Date for Applications: 5pm Friday 29 May

Applications should be made through the online form 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.