EUROPEAN SPACE AGENCY

Young Graduate Trainee in Ground Software Systems and Functional Verification

Job Req ID: 14825
Closing Date: 01 June 2022
Publication: External Only
Vacancy Type: Young Graduate Trainee
Date Posted: 18 May 2022
Young Graduate Opportunity in the Directorate of Technology, Engineering and Quality

ESA is an equal opportunity employer, committed to achieving diversity within the workforce and creating an inclusive working environment. We therefore welcome applications from all qualified candidates irrespective of gender, sexual orientation, ethnicity, beliefs, age, disability or other characteristics. Applications from women are encouraged.

This post is classified F1.

Location
ESTEC, Noordwijk, Netherlands

Our team and mission
The Software Systems Division is responsible for software engineering –
see http://www.esa.int/Our_Activities/Space_Engineering/Software_Systems

This covers verification and validation techniques for checking mission-critical software, software technology for flight and ground systems, real-time software embedded in spacecraft systems and payloads; ground facilities software, including electrical ground support equipment, test-benches, databases and simulation and modelling tools; and complex software-intensive systems using state-of-the-art software technology, methods and tools.

The Software Systems Division provides support to all ESA satellite projects.
You are encouraged to visit the ESA website: http://www.esa.int

Field(s) of activity/research for the traineeship

For this opportunity, you will join the team of experts in the Software Systems Division's Ground Software and Functional Verification Section. This group focuses on the development of simulation and modelling infrastructure and tools. These tools are used for the verification and validation of space systems and software. Specific technologies (such as virtual reality and visualisation applications) are used, e.g. for astronaut training.

Key elements for the ground software to build Software Verification Facilities (SVF) comprise e.g. emulators, monitoring and control, simulation engines, system database and data models, pre- and post-processing, and automation/procedure execution tools.
The activity involves joining the ESTEC team working on preparing the future next-generation SVFs and functional verification systems. A reference or straw-man mission has been developed (EagleEye) to provide a realistic context in which to demonstrate and verify new applications. A reference system is currently being developed to support nanosats (CubeSat) and SmallSat projects.

This training opportunity will require you to participate in these development activities and enable you to learn more about modern software methods and tools for real-time system modelling and simulation, as well as ground support equipment, and will increase your knowledge of functional verification for software verification/validation.

Technical competencies
Knowledge of relevant technical domains
Relevant experience gained during internships/project work
Breadth of exposure coming from past and/or current research/activities
Knowledge of ESA and its programmes/projects

Behavioural competencies
Result Orientation
Operational Efficiency
Fostering Cooperation
Relationship Management
Continuous Improvement
Forward Thinking

Education
You should have just completed or be in the final year of your Master's degree in a technical or scientific discipline, such as computer science, software engineering, informatics, physics, mathematics and aerospace engineering.

Additional requirements
Knowledge of some of these relevant key technical areas:
•   Software development environments and tools (Git, JIRA, Confluence, Maven, Jenkins, Nexus, SonarCube),
•   System simulation facilities, software validation facilities,
•   Communication buses (MIL1553 bus, CAN),
•   Real-time systems,
•   Programming/modelling/scripting languages (MATLAB, C/C++, Java/Groovy, Tcl/Tk),
•   Space simulation models and simulation tools such as MathWorks MATLAB/Simulink.

You should have good interpersonal and communication skills and should be able to work in a multi-cultural environment, both independently and as part of a team.
The working languages of the Agency are English and French. A good knowledge of one of these is required. Knowledge of another Member State language would be an asset.
During the interview motivation and overall professional perspective/career goals will also be explored.

Other information
For behavioural competencies expected from ESA staff in general, please refer to the ESA Competency Framework.

For further information on the Young Graduate Programme please visit: Young Graduate Programme and FAQ Young Graduate Programme

At the Agency we value diversity and we welcome people with disabilities. Whenever possible, we seek to accommodate individuals with disabilities by providing the necessary support at the workplace. The Human Resources Department can also provide assistance during the recruitment process. If you would like to discuss this further please contact us email contact.human.resources@esa.int.

Please note that applications are only considered from nationals of one of the following States: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, and the United Kingdom. Nationals from Latvia, Lithuania, and Slovenia, as Associate Member States, or Canada as a Cooperating State, can apply as well as those from Bulgaria, Cyprus and Slovakia as European Cooperating States (ECS).

According to the ESA Convention, the recruitment of staff must take into account an adequate distribution of posts among nationals of the ESA Member States*. When short-listing for an interview, priority will first be given to candidates from under-represented or balanced Member States*. (https://esamultimedia.esa.int/docs/careers/NationalityTargets.pdf)

In accordance with the European Space Agency's security procedures and as part of the selection process, successful candidates will be required to undergo basic screening before appointment.

*Member States, Associate Members or Cooperating States.