

# Job Title: Young Graduate Trainee for Artificial Intelligence for increased level of Autonomy in Operations

Req ID 9805 - Posted 09/03/2020



## EUROPEAN SPACE AGENCY

Young Graduate Traineeship Opportunity in the Directorate of Operations.

ESA is an equal opportunity employer, committed to achieving diversity within the workforce and creating an inclusive working environment. Applications from women are encouraged.

### Post

#### Young Graduate Trainee for Artificial Intelligence for increased level of Autonomy in Operations

This post is classified F1.

### Location

ESOC, Darmstadt, Germany

### Our team and mission

The Artificial Intelligence & Operations Innovation Team at ESA's European Space Operations Centre (ESOC) has since 2001 been actively facilitating the integration of advanced AI technology in support of flying and future missions at ESA, collaborating with European national agencies and industry.

Our Team comprises experienced researchers and engineers who have achieved international recognition in data analytics, monitoring, diagnostics, machine learning, planning and scheduling, cognitive systems design for autonomy and human/computer interaction systems.

Candidates interested are encouraged to visit the ESA website: <http://www.esa.int>

### Field(s) of activity

Upcoming space missions – whether targeting Earth, planets or deep space – and big commercial constellations will require higher degree on-board operational autonomy to increase quality science return, minimise close- loop space/ground decision-making and enable new complex scenarios.

The Team is investigating and deploying advanced AI planning, scheduling and data analytics technologies for autonomy. AI technologies like machine learning and automated planning are becoming more and more widespread, as they can support data analytics conducted directly onboard as input for the onboard decision-making system that generates plans or updates them while being executed.

These new operational scenarios are causing a redistribution of processes between ground and space: even if some decisions are taken onboard, it is still valuable that some are performed on the ground (i.e. for FDIR, platform management, orbit management). Hence, the increasing presence of onboard autonomy will evolve the ground segment role towards properly supporting onboard autonomous processes.

This traineeship activity will contribute to an ongoing research line in state-of-the-art planning and control by investigating and designing software for supporting intelligent operations for autonomous systems. The ultimate goal is to enhance and simplify the entire plan generation/validation/execution loop for future, more autonomous missions.

### 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**

Self Motivation  
Communication  
Continuous Learning  
Cross-Cultural Sensitivity  
Teamwork

## **Education**

You should have just completed, or be in the final year of a university course at Master's level (or equivalent) in a technical or scientific discipline.

## **Additional requirements**

- Good programming skills (Java and C++) - Mandatory
- Background on AI Planning and Scheduling - Preferable
- Basic knowledge of Java concurrent programming for real time systems – Preferable

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. You should demonstrate good interpersonal skills and the capacity to work both independently and as part of a team.

During the interview your 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](#).

**The closing date for applications is 08 April 2020.**

If you require support with your application due to a disability, please email [contact.human.resources@esa.int](mailto:contact.human.resources@esa.int).

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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 Slovenia, as an Associate Member, or Canada as a Cooperating State, can apply as well as those from Bulgaria, Cyprus, Latvia, Lithuania and Slovakia as European Cooperating States (ECS).

Priority will first be given to candidates from under-represented Member States.

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