Training Opportunity for Irish Trainees

Reference	Title	Duty Station
IE-2018-OPS-OSA	**Artificial Intelligence and Data Analytics for space operations**	**ESOC**

Overview of the unit's mission:

The Advanced Mission Concepts Office (OPS-OSA) is entrusted with three activity groups:

a) investigation and promotion of innovative operations concepts
b) exploration and exploitation of innovative control technology for ESOC's core business in space and ground control (e.g. monitoring, diagnosis, predictive analytics, advanced planning & scheduling)
c) coordination and undertaking of ground segment preparation and operations implementation for special projects.

The Data Analytics Team for Operations (DATO), part of the unit, is focused on developing prototypes and novel applications to support space operations tasks, such as early detection, diagnostics, forecasting.
DATO is supported by a Research & Development computer facility, which allows hands-on work on artificial intelligence applications.

Overview of the field of activity proposed:

The candidate trainee will become member of the DATO (Data Analytics Team for Operations) and will be initially integrated in one of the on-going internal projects.

The main activities proposed would involve the design and development of a tool box for:

- Predictive analytics
- Dependencies and correlation analysis
- Timeseries analysis
- Data annotation
- Data-driven visualization

Activities will require collaboration with multiple teams (data scientists, IT and infrastructure, flight control teams, system engineers, etc.). The team works on multiple, related projects requiring creativity, ingenuity and a sense for holistic perspectives. The proposed traineeship involves the development of prototypes using agile methods (scrum, kanban) with analysis and understanding of user needs.

Required education:

Applicants must have recently attained their Master degree in Computer Science, Data Science, System Engineering or equivalent.
Required skills:

- Good knowledge and practice of programming languages: python, java or C++
- Experience in web applications development framework (e.g., Angular, Ionic, React)
- Good knowledge and practice of mathematics; matrix, series and integrals
- Fair knowledge and practice of Linux administration and bash scripting
- Good presentation delivery skills
- Greatly developed empathy and motivation