Training Opportunity for Portuguese Trainees

Reference	Title	Duty Station
PT-2019-OPS-OSA(1)	Data Analytics and Machine Learning for Space	ESOC

Overview of the Unit missions:

The Advanced Mission Concepts Section (OPS-OSA) is entrusted with three activity groups:
a) investigation and promotion of innovative operations concepts
b) exploration and exploitation of advanced technology for ESOC's core business in space and ground operations (e.g. monitoring, diagnosis, planning & scheduling)
c) coordination and undertaking of ground segment preparation and operations implementation for special projects.

The section's advanced operations technology prototyping activity is supported by a Research & Development computer facility, which allows hands-on work.

Overview of the field of activity proposed:

The main activities proposed would involve the design, development and validation of advanced prototypes in the areas of data analytics, machine learning and data visualization in space. The candidate will be involved in one or more of the following fields:

- Monitoring (e.g. automatic detection of anomalies or other interesting events)
- Diagnostics (e.g. data analytics approach to explain why a situation happened)
- Forecasting (e.g. make predictions based on assumptions and what-if scenarios)
- Visualization of large amounts of data in an useful way to the flight control teams

The proposed traineeship would involve close collaboration with ESOC mission teams for requirements elicitation prior to the development of the software prototypes. Technical coordination & support and coaching will be provided by on site individual project leaders.

Required Education:

Applicants must have recently attained their degree or be close to successfully completing their studies in Computer Science and Data Analytics / Statistics / Probability.
Required skills:
- Good software development skills (with python language knowledge as a plus)
- Data Analytics including statistics, probability, etc.
- Machine Learning supervised (e.g. classification, regression) and unsupervised (e.g. clustering)