ANNOUNCEMENT OF OPPORTUNITY

for

ASI Postdoctoral Research Fellowship
in
Artificial Intelligence and Earth Observation

1) POSITION

One Postdoctoral Research Fellowship (duration 2-years) is posted for Italian young researchers, addressing the use of Artificial Intelligence (AI) applied to Earth Observation (EO).

The position is supported by the Italian Space Agency (ASI) with placement at the European Space Agency (ESA) Φ-lab at ESRIN in Frascati (Rome).

2) TASKS

The idea of this position is to foster collaboration between ASI and ESA and in particular on the development of innovative EO solutions powered by AI. The winner of the selection will be mainly based at the Φ-lab, which offers an open-space and inspiring collaborative and design-thinking environment to develop his research alongside a team of innovators, data scientists and researchers passionate about innovation. The researcher will report to both the ASI and ESA defined points of contact.

In particular, he will:
- Work in an open collaborative and multi-disciplinary research team,
- Actively cooperate with other staff in ASI and ESA, and with industry and research communities to enable transfer of research results to applications.
- Perform research on AI and EO. The specific area of research is partly chosen by you based on your own expert interest but also partly chosen by the team as to follow strategic directions of the Space Agencies. You will have to provide a one-page research proposal as part of this application,
- Contribute to the Φ-lab sprints research by rapidly prototyping and evaluating AI solutions for application to EO data sets and challenges, particularly those relevant for ESA EO missions.
- Adapt existing AI algorithms and tools to take account of the specific characteristics of EO data sets, physical measurement principles, and apply them to EO data applications (e.g. Sentinel) with particular interest in hyperspectral imaging (e.g. Prisma),
- Analyse the applicability of transfer learning to perform AI at the edge, directly on sensor,
- Prepare, validate and maintain large-scale, training data sets, to be used for development and evaluation of AI algorithms, by international research and industrial communities
- Contribute to the development of an interactive environment for rapid prototyping and testing of new ideas,
- Organise and lead AI4EO challenges on proposed topics,
- Collaborate with academia and industrial partners to transfer research results to applications,

- Publish in peer-review literature,
- Promote/share your results and tools through new digital tools, including social media and Jupyter notebooks,
- Perform and participate in assessments on subjects of strategic interest of ASI and ESA,

3) REQUIREMENTS AND COMPETENCES

- Being an Italian citizenship;

Technical competences
- Strong background in computer science fundamentals and AI techniques;
- Application of statistical analysis methods to multidimensional data sets;
- Understanding of EO data;

Behavioural competencies
- Innovation and creativity
- Continuous Learning
- Communication
- Teamwork
- Self-motivation
- Problem-solving

Education
- Applicants should have recently completed a PhD (or obtained by the time the Post Doc begins) in a related technical or scientific discipline. e.g. engineering, computer science, space science, data science,
- PhD relevant for the specific research themes of interest;

Additional Requirements
- Very good knowledge of English,
- In depth knowledge of themes of interest,
- Proven experience in leading research, with international recognition,
- Ability to think outside the box and explore new avenues , with natural curiosity and a passion for new subjects and research areas,
- Ability to work in a multicultural environment and to foster team spirit,
- Proficiency with one or more programming languages (e.g. Python, JavaScript), and with deep learning frameworks (e.g. Tensorflow, PyTorch) is an asset,
- Ability to work in a team, while being able to work individually regarding his/her own personal research plans and directions,

4) CONTRACT DETAILS
The winner of the selection will work mainly at Φ-lab in ESRIN, Frascati. Some missions to conferences will be supported by ESA. The monthly net salary is highly competitive (3.000 €) and will be paid by ASI. The selected researcher will sign a contract where all the engagement conditions will be specified. Mandatory insurance (INAIL etc.) will be included in the contract while civil liability insurance will be

at his own expenses.

5) APPLICATION PROCEDURE

The present Announcement of Opportunity is addressed to Italian citizens.

The application must include:

- A Cover letter duly signed;
- A Curriculum Vitae (CV) duly signed, completed with scores for academic titles and including links where possible (e.g. with hyperlinks to your publication record, LinkedIn profile and Github account, when available);
- A 2-pages proposal for a research Case Study;
- Three signed letters of references;
- Copy of a valid ID document;
- Copies of academic titles (University Diploma, Phd, any other titles) where available.

6) DEADLINE FOR SUBMISSION OF APPLICATIONS

The completed application must be mailed to the Italian Space Agency (ASI) at the e-mail address: sabrina.ricci@asi.it, within and not beyond the 2nd of August 2019.
Applications received beyond the deadline will not be accepted.

7) SELECTION

A dedicated ASI-ESRIN evaluation panel will proceed with a pre-selection among the received applications based on academic and professional titles of the participants.
and will form a short list to interview.