



2018-IPR-I-000-9625

**Image processing for batch and
interactive analysis**

<p>Position for:</p> <p>Trainee</p>	<p>As the science and knowledge service of the Commission, the mission of Joint Research Centre is to support EU policies with independent evidence throughout the whole policy cycle.</p> <p>The JRC is located in 5 Member States (Belgium, Germany, Italy, the Netherlands and Spain). Further information is available at: http://www.jrc.ec.europa.eu</p> <p><u>Short description of activity:</u></p> <p>The <i>Text and Data Mining Unit</i> (I3) of the European Commission's <i>Joint Research Centre</i> (JRC) in Ispra, Italy, is looking for a trainee to support the JRC's Earth Observation and Social Sensing Big Data pilot project (EO&SS@BD) team in its effort to improve its image information extraction tools available for both batch processing and interactive visualisation and analysis.</p> <p>These tools are deployed on the JRC Earth Observation Data and Processing Platform (JEODPP), a petabyte scale data and processing platform developed by the EO&SS@BD team. Many of these tools are programmed in C and wrapped to a more generic library written in C++ library that also contains many numerous methods for the processing of raster and vector geospatial data.</p> <p>The C++ methods are then automatically wrapped to Python using SWIG. The tools consist of standard image processing functions complemented by a range of advanced image analysis functions based on mathematical morphology and hierarchical image representations as well as machine learning. The JEODPP offers 3 main services via a web-access: batch processing, remote desktop, and interactive visualisation and analysis. These services are used by numerous projects across JRC requiring the analysis of geospatial data.</p> <p>The JRC's Earth Observation and Social Sensing Big Data pilot project (EO&SS@BD) team develops innovative methods for the timely processing and analysis of massive amounts of geospatial data for a range of applications from partner projects across JRC</p>
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(e.g., environment, agriculture, development, and natural hazards).

The JEODPP platform consists of a petabyte scale storage system complemented co-located with computing capacities. It is versatile in the sense that it accommodates the needs of users with very different levels of computer skills. The EO&SS@BD team contributes to the publication of scientific publications in conferences and peer-reviewed journals

The successful trainee will help to advance the data analysis capabilities of geospatial raster data on the JRC Earth Observation Data and Processing Platform. More precisely, the trainee will contribute to the integration of image analysis functions to the python library as well as the to the interactive mode provided by dedicated Jupyter notebooks. If applicable, the trainee is also expected to contribute to writing a scientific publication on the work carried out.

Qualifications:

Essential:

- University Degree
(or an almost completed degree – according to the Trainee Rules This type of training is for individuals who are receiving a university education or its equivalent and are preparing a thesis for a university degree or Master's degree or Ph.D. or its equivalent at graduate level. The purpose of the training must be directly related to the subject of the thesis.)
in computer science, engineering, or related areas;
- C/C++ and Python programming skills;
- Good working knowledge of English; (almost B2 level)

Advantage:

- knowledge of further foreign languages;
- advanced programming skills for image processing;
- good knowledge of image processing and machine learning tools and methods;
- the proven ability to work independently and as part of a team.

In your application, please provide clear information on your skill set, by elaborating on the above-

	<p>mentioned list of requirements and by listing your level of languages and your computer / programming skills.</p> <p><u>For general eligibility requirements, please read the rules governing the traineeship scheme of the JRC:</u></p> <p>https://ec.europa.eu/jrc/en/working-with-us/jobs/temporary-positions/jrc-trainees</p>
Unit / Directorate	Directorate <i>Competences</i> I03 – <i>Text and Data Mining Unit</i>
Indicative duration	5 months
Preferred starting date	As soon as possible
JRC Site	Ispra
Country	Italy
<u>JRC contact details</u>	<p>For any technical problems with your application, please contact:</p> <p>HR-AMC8-RECRUITMENT-TOOLS-SUPPORT@ec.europa.eu</p>