



2018-IPR-I-000-010675

Information extraction from geospatial data

<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 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 (e.g., environment, agriculture, development, and natural hazards). The JEODPP platform consists of a multi-petabyte scale storage system co-located with computing capacities including GPUs for machine learning. 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.</p> <p>The <i>Text and Data Mining Unit (I3)</i> of the European Commission's <i>Joint Research Centre (JRC)</i> 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. 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</p>
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	<p>contains many numerous methods for the processing of raster and vector geospatial data. 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 successful trainee will help to advance the data analysis capabilities of geospatial raster/vector data on the JRC Earth Observation Data and Processing Platform. In particular, the trainee he/she will contribute to the integration of image analysis and machine learning functions to the python library as well as the to the interactive mode through dedicated JupyterLab notebooks. If applicable, the trainee is also expected to contribute to writing a scientific publication on the work carried out.</p> <p><u>Qualifications:</u></p> <p><u>Essential:</u></p> <ul style="list-style-type: none"> • Master degree (or an almost completed degree) in computer science, engineering, or related areas (in case of almost completed degree the candidate has to prove that the thesis has already be registered and the subject of the thesis has to match with the project); • C/C++ and Python programming skills; • Good working knowledge of English. <p><u>Advantage:</u></p> <p>Advanced programming skills for image processing;</p> <p>good knowledge of image analysis/processing and machine learning tools, open source libraries, and methods;</p> <p>hands-on experience with Linux;</p>
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	<p>the proven ability to work independently and as part of a team;</p> <p>knowledge of further foreign languages;</p> <p><i>In your application, please provide clear information on your skill set, by elaborating on the above-mentioned list of requirements and by listing your level of languages and your computer / programming skills.</i></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
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>