



2019-IPR-D5-FGIV-013049

**FG IV – Scientific Project Officer - Crop yield forecasting with machine learning**

<p><b>Position for:</b></p> <p><b>FGIV-Project Officer</b></p>	<p>As the science and knowledge service of the Commission, the mission of DG 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: <a href="https://ec.europa.eu/jrc/">https://ec.europa.eu/jrc/</a></p> <p>The JRC offers a vacancy for Contract Agent that is supported by Antoine Royer Award 2019 - Science and Policy for Sustainable Development in Africa.</p> <p>The vacancy is within the Food Security Unit, which contributes to scientific development towards a more effective, and efficient management of EU policies related to agriculture and food security.</p> <p>The current open position and activities are related to the FOODSEC Group of the Food Security Unit, which deals with food and nutrition security analysis and policy support in food insecure countries and globally.</p> <p>The candidate will contribute to the work of the group in the use of meteorological and Earth Observation (EO) data for crop yield forecasting in Africa. In particular, the candidate will support the Food and Nutrition project in the development and testing of machine learning (ML) methods and artificial intelligence (AI) for crop yield estimation and in their comparison with the methods currently in use, based mainly on linear regression and scenario analysis.</p> <p>The candidate will develop, code and test the performance of novel ML techniques, both in terms of accuracy and timeliness of the yield prediction. The candidate is expected to be creative and work independently.</p> <p>The successful candidate will be in charge of:</p> <ul style="list-style-type: none"><li>• Designing, setting up, and coding ML methods (including random forest, support vector machine, neural network and 1D convolutional neural network) to forecast crop yield in selected African countries;</li><li>• Testing the performances of ML methods, in terms of both accuracy and timeliness of the prediction, against benchmarking results obtained by the CST;</li><li>• Dissemination/publication of the results.</li><li>• contributing to partnerships and networks with African partners and, according to needs, support capacity building and training.</li></ul> <p><b>Qualifications</b></p> <p>The ideal candidate should have:</p> <ul style="list-style-type: none"><li>• Completed university studies of at least three years attested by a diploma and at least three years professional</li></ul>
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	<p>experience in a field relevant to the position, or a doctoral diploma in geospatial sciences, remote sensing, image processing, machine learning, big data analytics, applied mathematics and computer science, bioscience and agriculture or related field;</p> <ul style="list-style-type: none"> <li>• Excellent programming skills in python are essential, C/C++ or other languages are advantage;</li> <li>• Experience with deep learning and ML packages (e.g. TensorFlow, Keras, PyTorch) are essential, experience with explainable artificial intelligence is an asset;</li> <li>• Experience in application of ML to regression problems in geospatial data is an advantage;</li> <li>• Solid record of research activities relevant for the post including publications in international peer-reviewed journals is an advantage;</li> <li>• Work experience in Africa and crop modelling contexts are highly desirable;</li> <li>• Good communication, coding and writing skills and ability to support training and capacity building are advantages;</li> <li>• Knowledge of English (B2) is required.</li> </ul>
<b>Directorate Unit</b>	<p>Sustainable Resources Food security</p> <p>Further information: <a href="https://ec.europa.eu/jrc/">https://ec.europa.eu/jrc/</a></p>
<b>Indicative duration</b>	<p>12 months initial contract with possible renewals up to maximum 6 years</p>
<b>JRC Site</b> <b>Country</b>	<p>Ispra</p> <p>Italy</p>
<b>Rules and eligibility</b>	<p>The candidate must be on a valid EPSO reserve list for Function Group IV contract staff.</p> <p>If you are not in any valid EPSO reserve list for Function Group IV contract staff, you can still apply by following these steps.</p> <p>You express your interest by applying to the CAST Permanent or to the permanent JRC Call for researchers.</p> <p>1. CAST Permanent: open-ended selection procedure to create a pool of candidates from which the institutions, bodies, offices and agencies of the European Union (EU) can recruit contract agents. <a href="https://epso.europa.eu/documents/2240_en">https://epso.europa.eu/documents/2240_en</a></p> <p>2. JRC Call COM/1/2015/GFIV – Research: open-ended selection procedure to create a pool of candidates from which mainly the JRC can recruit contract agents FGIV as researchers. Details available at the link below: <a href="https://ec.europa.eu/jrc/en/working-with-us/jobs/vacancies/function-group-IV-researchers">https://ec.europa.eu/jrc/en/working-with-us/jobs/vacancies/function-group-IV-researchers</a></p>

Only then you can apply for this specific position, through <http://recruitment.jrc.ec.europa.eu/?type=AX>

**Auxiliary contract staff:**

<https://ec.europa.eu/jrc/en/working-with-us/jobs/temporary-positions/contract-staff-members>

Article 3b of the Conditions of Employment of Other Servants of the European Union applies: the actual period of employment within the Commission under this type of contract, including any period under renewal, shall not exceed 6 years.

*Please note that in case a high number of applications is received only shortlisted candidates will be contacted.*