VACANCY NOTICE FOR A CONTRACT AGENT SELECTION

Job title	**FGIV - Scientist - Exploratory Research Project - Machine Learning - Air Quality Sensing**
Reference	EC-2026-JRC-529513
Application deadline	**14/12/2026 - 12.00 (noon, Brussels time)**
Directorate-General (full name)	Joint Research Centre (JRC)
Unit	Clean Air and Climate Unit
Place of assignment	Ispra, Italy
Domain	Science and Research
Contract type and Function Group	Contract Agent 3b FGIV

About us

The Joint Research Centre (JRC) provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society.

The current vacancy is in the Clean Air and Climate Unit of the Energy, Mobility and Climate Directorate. The Unit's mission is to provide scientific and technical analyses in support of integrated air quality, climate and related policies. It is committed to the evaluation of emissions of greenhouse gases and air pollutants, to measuring and modelling atmospheric components of relevance for human health, ecosystems and climate and to the harmonisation of monitoring and modelling techniques. Important research infrastructures of the Unit comprise the European Commission Atmospheric Observatory (EC AtmO) and the European Reference Laboratory for Air Pollution (ERLAP), where we develop, validate, monitor, standardise and harmonise measurement techniques for health and climate relevant air pollutants.

The Centre for Advanced Studies oversees the overall JRC Exploratory Research Programme.

The vacancy is within the **Exploratory Research Project 'Atmospheric Sensing and Trustworthy Intelligence' (ASTI)**. The JRC Exploratory Research Programme is a strategic initiative characterised by ideas that might lead to novel results and qualitatively enrich current JRC scientific work.

About the role

We offer a stimulating, varied, and rewarding job in a family-friendly and empowering working environment, with opportunities to work on a challenging and high-impact project. The selected candidate will be part of a motivated team based in Ispra (VA), Italy, contributing to the European Commission's Atmospheric Observatory (EC AtmO) and the European Reference Page 2 of 3 Laboratory for Air Pollution (ERLAP). We develop, validate and harmonise new air measurement methods, such as sensor-based systems. We provide a supportive and collaborative atmosphere, with opportunities for professional growth and development, and the chance to make a meaningful contribution to the EU's environmental objectives. The Exploratory Research Project ASTI aims to transform air-quality monitoring by shifting to autonomous, on-device calibration of low-cost sensors, enhanced by a low-power Edge-AI module to execute real-time multi-parameter calibration and continuous drift correction. Building on the JRC's extensive collocated measurement dataset and the JRC AirSensEUR sensor system, the project will develop machine-learning calibration models that can run on constrained microcontrollers, eliminating the need for costly centralised post-processing and enabling self-contained operation even in disconnected environments. This novel approach promises to reduce calibration expenses and improve long-term data reliability, directly advancing the JRC's mission to provide robust environmental data, in line with the European Green Deal and Clean Air objectives. Please see also Working at the European Commission

The successful candidate will carry out scientific and technical tasks in accordance with the Exploratory Research Project 'Atmospheric Sensing and trustworthy Intelligence' (ASTI) with special emphasis on the deployment of ML calibration algorithms for air quality monitoring directly on sensor systems by adding Edge AI modules.

S/he will contribute to:

- Developing, training and validating non-linear AI calibration models using the existing dataset of sensor and reference measurements in European cities for $PM_{2.5}$, PM_{10}, NO, NO_2, and O_3.
- Evaluating measurable improvements of AI calibration models over current static regression techniques.
- Compressing the best-performing models in order to deploy on a low-power Edge AI microcontroller, achieving autonomous real-time initial and periodical calibration adjustments directly at the sensor system node level without the need for central server computing operations.
- Following the electronic modification of the JRC developed AirSensEUR sensor system by an external company aimed at accommodating the low-power Edge AI microcontroller.
- Validating the integrated system under operational field conditions against reference analysers at the European Commission's Atmospheric Observatory (EC AtmO), assessing compliance with EU Data Quality Objectives for sensor measurements.
- Releasing all firmware, trained models, dataset and benchmark data under the European Union Public License, providing an open and transferable framework for the European sensor community.



• Writing, disseminating and publishing results, among other, in peer-reviewed journal.
• Reporting to the project coordinator and co-coordinator on progress, achievements and potential problems in a timely manner.

Qualifications, experience and skills

We are looking for a highly motivated data scientist or engineer with expertise in machine learning and/or Edge AI and possibly experience with air quality monitoring, environmental data analysis with the following essential qualifications and experience:

• A university degree in applied mathematics, computer science, data science, environmental sciences, atmospheric sciences, electronics, engineering, physics, or a related field.
• At least three years of strong experience in developing statistical or machine-learning models and analysing large datasets.
• Good programming skills in R and/or Python.
• Ability to work autonomously and in a multidisciplinary team.
• Good oral and written communication skills in English (C.1).
• Good skills in writing and communicating to scientific and non-scientific audiences as well as the public.

In addition, the following competences will be considered an advantage:
• PhD in applied mathematics, computer science, data science, environmental sciences,
atmospheric sciences, electronics, engineering, physics, or a related field.
• Experience with low-cost air quality sensors, calibration methods and field measurements.
• Experience with data treatment of large time-series datasets or multivariate data.
• Experience with embedded AI, model compression, microcontrollers or firmware integration.
• Experience in model calibration validation, benchmarking and/or uncertainty assessment.
• Experience in scientific publishing and technical reporting.

How to express your interest?
Please submit your application via the JRC Recruitment Portal.
Being registered for at least one of the two following databases is also necessary:

- the Selection process for contract staff | EU Personnel Selection – EU Careers (EPSO CAST FG IV), which is used by a wide range of organisations (institutions, bodies, offices and agencies of the European Union), or
- the JRC Open Call for Researchers, (JRC Call COM/1/2015/GFIV – Research), which is mainly used by the JRC.

Eligibility

For eligibility please consult this page with all the information needed.


European
Commission