



2022-IPR-GII7-FGIV-021352

**FG IV - Project Officer - Artificial Intelligence expert
for nuclear safeguards and security applications**

POSITION FOR:

Member of the contract staff FGIV – art. 3b of the Conditions of Employment of Other Servants

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1962R0031:20110101:EN:PDF>

WE ARE:

As the science and knowledge service of the Commission, the mission of DG Joint Research Centre (JRC) is to support EU policies with independent evidence throughout the whole policy cycle.

The JRC is located in 5 Member States (Belgium, Germany, Italy, the Netherlands and Spain). Further information is available at: <https://ec.europa.eu/jrc/>

The Nuclear Security Unit of the Directorate for Nuclear Safety and Security provides enabling research, technology and instruments for nuclear safeguards and security to inspection agencies, States and operators. Activities range from nuclear non-destructive analysis and process monitoring to containment & surveillance, verification and detection technologies.

In the coming years, the Digital Transformation will have a significant impact on Nuclear Safeguards implementation. Emerging technologies, such as artificial intelligence, machine learning and robotics, will create many opportunities for increasing the efficiency and effectiveness of nuclear safeguards inspectors and in nuclear security. In this reorganisation, the Nuclear Security unit has identified artificial intelligence as one of the key areas of competence that is required in the future unit structure.

Further information is available at: <https://ec.europa.eu/jrc/en/research-topic/nuclear-safeguards>

WE PROPOSE:

The present position is in the Artificial Intelligence pole, where the jobholder will strengthen the unit's activities on the Digital Transformation. S/He will explore applications of artificial intelligence also related to emerging technologies, such as machine learning, robotics and Virtual/Augmented Reality, to Nuclear Safeguards and Nuclear Security applications. The selected candidate will work on the development of new algorithms and systems supporting nuclear inspectors in the monitoring and verification of nuclear facilities and in detection systems for nuclear security.

S/He will carry out underlying research and development activities and propose innovative solutions for processing safeguards sensor data, including (optical/3D) surveillance data and nuclear process measurements. Results are expected to be of high scientific quality and to be published on high level conferences and journals.

The activities include the complete R&D cycle from underlying research, to implementation of new systems and training for safeguards inspectors.

WE LOOK FOR:

Candidates will have the following qualifications.

Essential:

- Master diploma in Computer Science (or equivalent)
- At least 3 years of experience in the area of artificial intelligence and machine learning, and its application to the analysis of sensor data.
- At least 3 years experience in software development using relevant technologies such as C++, Python and AI frameworks.

Advantage

- Ph.D. or research activities relevant for the post with a solid record of publications in international peer-reviewed journals.

- Experience in the development of deep learning methods for 2D/3D surveillance and/or NDA analysis.
- Experience in developing augmented and virtual reality applications;
- Experience in the development of verification and monitoring systems for nuclear safeguards.
- Good knowledge of French or Italian languages is an advantage

We look for an enthusiastic, motivated and passionate colleague, with a strong problem-solving attitude, proven communication skills, the ability to work in a team, the capacity to take initiatives and to work autonomously. Interest in applying data and statistical skills in the activity domain of the unit and flexibility are key. A good command of English (B2), both oral and written is required.

INDICATIVE CONTRACT'S DURATION:

36 months initial contract with possible renewals up to maximum 6 years.

PLACE OF WORK:

Ispra (IT)

ELIGIBILITY CRITERIA:

Candidates for this contract agent post shall:

– (i) have passed a valid EPSO CAST selection procedure;

or

– (ii) be registered in the EPSO Permanent CAST <https://epso.europa.eu/en/documents/call-expressions-interest-0>

or

– (iii) be registered in the specialised call for researchers https://joint-research-centre.ec.europa.eu/working-us/jobs-jrc/temporary-positions/contract-staff-members/function-group-iv/job-opportunities-research-fellows-european-commission_en (used mainly by the JRC).

With a valid application number to one of the above, you may then apply for this specific vacancy at JRC through: <http://recruitment.jrc.ec.europa.eu/?type=AX>.

RECRUITMENT POLICY:

The Joint Research Centre

- Cultivates a workplace based on respect for other people and the environment.
- Embraces non-discriminatory practices and equality of opportunity. In case of equal merit, preference will be given to the gender in minority.