

**2021-IPR-I3-FGIV-018689****FG IV - Project Officer - Scientific research - Data Scientist****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 vacancy is within Directorate for Competences, Text and Data Mining Unit, which aims to develop, provide access to, and apply text and (big) data mining, management and analysis. The Unit also provides: (i) guidance on the use of statistical methods as well as text mining and analysis techniques for information extraction; (ii) one-stop-shop for tools, services and training for the EU institutions and strategic partners to support their needs in the fields of open sources intelligence, media monitoring, information harvesting and analysis as well as innovation monitoring, statistical data mining and visualisation; (iii) set-up of Competence Centres in these areas as appropriate.

WE PROPOSE:

The vacancy is for a Contract Agent within the Data Analysis and Robust Statistics (DARS) group of the Text and Data Mining Unit. DARS objective is to provide support for the use and uptake of state-of-the-art data analysis and robust statistical methods in the lifecycle of EU policies. The DARS team has longstanding expertise in data analysis on structured numerical, categorical and textual data, including time series, in the domains of anti-fraud, customs, taxation and international trade. The ambition is to expand in the direction of realistic mathematical and statistical modelling of economic and financial phenomena linked to relevant EU policies, such as environment, health, food and energy. A specific aim of DARS is to foster awareness, answers and tools to address the risks that model misspecification and data anomalies exert on the policy decision making.

The successful candidate will:

- Conduct research and development activities regarding the application of state-of-the-art statistical and machine learning (ML) methods in the projects undertaken by DARS. This is expected to include work on imbalanced training sets, clusters of very uneven sizes (needle in the haystack problem), and datasets from small to very large size.
- Design methodologies giving preference to interpretable models, ensuring that estimated/trained parameters explain the model predictions in a way that the user community can understand and use with transparency and accountability for their policy decisions. Depending on the application/policy domain, these might also include deep-learning nets.
- Collaborate closely with the rest of the DARS team in order to implement statistical/ML modules that utilize the knowhow in the DARS team and are well integrated in the DARS IT ecosystem. Such modules are expected to take full advantage of the available data management technologies and work efficiently even on very large datasets.
- Contribute to the engineering of tools and services with appropriate scalability and portability properties, for easy deployment in both prototype and operational environments.
- Contribute to steering the Unit's activities in the general area of ML. For this, she/he will adopt an open and interdisciplinary approach to problems, by facilitating the dialogue between the main data analysis cultures (e.g. algorithmic models with unknown data mechanism typical of ML vs stochastic data models) and by working closely with colleagues specialised in close scientific

areas in the Unit and more in general the JRC. These areas may cover data management, data visualization, text mining, GIS and network analysis.

- Interact and collaborate with colleagues in partner policy DGs. In particular, emphasis is given on the appropriate presentation of the DARS work and results to policy officers and policy makers.
- Contribute to the scientific output of the group as well as to deliverables of DARS projects.

The candidate will conduct some of these tasks autonomously but also have natural team-working attitude. She/he will acquire good understanding of the role of the JRC within the Commission and how activities of the group can contribute to policy DGs.

WE LOOK FOR:

The candidate's qualifications and skills include:

- An education at MSc level, and/or 2 years of professional work experience after having completed university studies of at least 3 years (Bachelor degree), in disciplines linked to machine learning, statistics, computer science, mathematics and, more in general, data science.
- Good scientific background in the machine learning domain.
- Good understanding of statistical modelling and mathematics.
- Good organization skills in order to deliver results on time, and with high scientific quality.
- Ability to work under pressure, work autonomously, adapt to evolving circumstances, and collaborate in a multicultural environment with colleagues and academic partners.
- Good knowledge of the English language and good communication skills, oral and written.

We evaluate positively:

- Education at PhD level.
- Relevant publication record in machine learning, computer science, statistics and mathematics.
- Hands on experience with state-of-the-art machine learning.
- Capacity to develop deep learning models and integrate/use their output in accountable, transparent and possibly automated decision systems.
- Data analysis, data mining, data science experience and skills.
- Knowledge of python, SQL, Java, MATLAB, R, SAS.

INDICATIVE CONTRACT'S DURATION:

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

PLACE OF WORK:

Ispira (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/documents/2240_en

or

- (iii) be registered in the specialised call for researchers <https://ec.europa.eu/jrc/en/working-with-us/jobs/vacancies/function-group-iv-researchers> (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.