



VACANCY NOTICE – 2023-GEE-F7-FGIV-022916

CA FGIV - Project Officer – Artificial Intelligence in Digital Health

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| Type of contract | Member of the European Commission's contract staff, Function Group IV (article 3b of the Conditions of Employment of Other Servants) |
| Duration of contract | 36 months (renewable up to maximum 6 years) |
| Area | <i>Field of Work:</i> Artificial Intelligence |
| Place of employment | Geel (BE) |
| Indicative basic salary | 3877,47 - 5616,29 € (applicable as of 1 st of July 2022) For more detailed information please consult: Working Conditions . |

WE ARE

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

The current vacancy is with Unit JRC.F7 Digital Health of the Directorate F – Health and Food in Geel (BE) in the group of Artificial Intelligence applied to health data in the context of project DigLife.

The work is on the analyses of complex multimodal health data by applying Artificial Intelligence. Nowadays medical knowledge is disseminated in millions of guidelines and research papers that contain very heterogeneous information represented as text, formulas, tables and images. Additionally, most of medical data are intrinsically multimodal and multi-dimensional, such as in the case of medical images as Computer Tomographic, Magnetic Resonance or Ultrasound scans.

In order to transform these data into insights that contribute to data-driven policy support and the shaping of legislation and to a comprehensive, holistic approach in research and clinical practice, it is important to develop semi-automatic systems that could process those data entirely, considering their intrinsic complexity.

For these reasons, we propose an effort in Computational Science and Machine Learning applied to text and medical data that could, together, contribute to our vision of semi-automatic processing of complex multimodal and multidimensional data.

We offer:

The successful candidate will work in a multidisciplinary setting of JRC staff and external collaborators. He or she will contribute to two or more of the above mentioned topics. The position offers an excellent opportunity to acquire experience in working with complex health data (clinical, genomics, imaging etc.) on interesting research topics, helping to improve health in the EU through high impact research.



WE PROPOSE

The jobholder will work on machine learning applied to health data, including text, genomics, medical image analysis, clinical and graphs datasets.

During this contract, the successful candidate will work with a variety of techniques such as convolutional and recurrent networks, transformers and graph neural networks to create models that generate insights that can be used at scale in the European Commission.

This will be applied to the processing of Literature and other textual data and convert them in a knowledge graph, to later fuse non-textual data into the results.

Among the responsibilities:

- Fine tuning of existing Large Language Models on a corpus of scientific literature for summarization, question and answers and knowledge extraction
- Graph conditioning: use of existing knowledge representations to influence the output of general language models
- Prompt engineering and few shot learning.
- Automatic reasoning on causal models.
- Creation of multimodal representation of health and clinical information that could be used to assist in the decision of a clinical recommendation.
- Fine tuning of existing methods for the segmentation and analysis of medical images and the creation of computational meshes
- Use of simulations techniques to produce insights into the advance of diseases or the response to therapies

WE LOOK FOR

We are looking for a Machine Learning Data Scientist with the following essential qualifications:

- A doctoral diploma (PhD) in Computer Science, Engineering, Physics, Applied Mathematics or a related field, alternatively completed university studies of at least three years attested by a diploma.
- At least **3 years** of professional experience in a field relevant to the position.
- Strong quantitative background with experience in machine learning, neural networks and deep learning.
- Proficiency in Python and deep learning frameworks (pytorch, tensorflow, etc.).
- Excellent written and spoken English (C1 level).
- Ability to work autonomously, and as part of a team.
- Ability to communicate scientific concepts in writing or orally.

Preferred qualifications:

- Good research and publication track record.
- Experience with Transformers, Graph Neural Networks or Reinforcement Learning.
- Experience with parallel training of deep learning models on multi-GPUs systems.
- Experience with machine learning interpretability and data visualization.
- Demonstrated ability in the management of large health data sets, including data retrieval, transformations and analysis with python or R.
- Work in international research teams and multidisciplinary fields.



HOW TO APPLY

If you are **already on a valid CAST FG IV reserve list**, or you **have already applied to one of the calls below**, you can directly submit your application at <http://recruitment.jrc.ec.europa.eu/?type=AX>.

If not, before applying to this position, **you must register** for one of the two following Calls:

- the [Call for Expressions of Interest | EU Careers \(europa.eu\)](http://europa.eu) (CAST Permanent FG II/III/IV), which is used by a wide range of organisations (institutions, bodies, offices and agencies of the European Union), or
- the [specialised call for researchers](#) (JRC Call COM/1/2015/GFIV – Research), which is mainly used by the JRC.

Note that each of the calls above has **different minimum eligibility requirements and different selection tests**.

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