

Senior Data Scientist

Background

The Biocomputing Unit at the Institute for Health Sciences in Aragon is looking for an exceptional Senior Data Scientist to lead new research projects based on the value of clinical information (electronic health records, evidence-based guidelines and protocols, medical literature, etc.) to create novel healthcare paradigms and incorporate them to the daily medical practice.

The IACS mission is to promote research, innovation and knowledge brokering in biomedicine and health sciences for the Aragon Health System. We aim to improve the quality, safety and sustainability of the Health Care System and support the decision-making process by providing HTA and evidence based products. IACS has a department of Evidence Based Decision Making (EBDM) that holds its responsibility as HTA agency for the Regional Government as well as Aragon node of the Spanish Network of HTA Agencies. In addition, the Institute holds the secretary of the national clearinghouse of clinical practice guidelines (GuiaSalud), coordinating the development, dissemination and adoption of evidence based products for the Spanish National Health System.

Regarding Research, Development and Innovation responsibilities, IACS supports stable research and innovation groups in the areas of clinical and translational medical research, biomedicine, public health, health systems and policy research. Organizational change and innovation (living labs, ideas exchange platform, public procurement of innovation, patents office) are coordinated from the Innovation Unit. As part of its support to biomedical research, we provide specialized scientific services through our 10 Research Core Facilities covering Genomics, Proteomics, Cell Culture and Flow Cytometry, Anatomic Pathology and Microscopy, Medical Imaging and Phenotyping and Experimental Surgery. Moreover, IACS is the regional authority for authorizing and monitoring (private and public) randomized control clinical trials as well as post authorization observational studies for drugs and devices.

RESPONSIBILITIES

The candidate will join an enthusiastic team directly involved in the Aragón Regional Health Authority BIGAN project, a Big Data infrastructure for research in healthcare; and the Spanish National Health Service Clinical Practice Guidelines Program BiGS project, a Smart Digital Library to answer patient and healthcare professionals using all available evidence.

As part of these projects, the candidate will be responsible for leading the bioinformatics component of multidisciplinary teams and collaborating with colleagues to advance bioinformatics in healthcare transformation and precision medicine leading research working on different topics including, but not limited to:

- *Precision and personalized medicine*: evaluation of the effectiveness of health interventions within population groups using health data from multiple structured and unstructured

information. It includes the creation of tools able to infer individual behaviour models or model patient flows within the healthcare services along the assistance process.

- *Integrated care*: provide healthcare professionals with decision support tools to assure continuity and best care during the assistance process. These tools rely on new methodologies and technologies to support the automation of care through formally defined protocols, e.g. computer interpretable guidelines, inferred from clinical evidences or tracing patients' actions along the healthcare system.
- *Preventive medicine*: promote a healthy lifestyle and provide mechanisms to automate the deployment of tools to monitor population health parameters and discover best practices, supported by compelling scientific evidence.
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REQUIREMENTS

- A PhD in computer science, electrical engineering, mathematics or physics. Candidates are expected to have a minimum of 6 years of postdoctoral experience for this call
More info at <https://araid.es/en/content/international-call-recruitment-researchers-2017>
- Research experience and strong publication record in machine learning, natural language processing, and computational statistics.
- Strong expertise in one or more of the following areas: machine learning, statistical modelling, deep learning, numerical optimization, data mining, algorithm design.
- Experience in one or more of the following areas: speech recognition, natural language processing, dialog, question and answering, knowledge representation, reasoning.
- Experience in extracting numerical, categorical and text information from unstructured information sources.
- Excellent programming, debugging and data analysis skills (Python, R, C/C++ and UNIX like environments). Fast prototyping research ideas effectively is highly encouraged.
- Able to take initiative, but also able to work as part of a cohesive team of researchers/scientists.
- Excellent communication skills (written and oral) in English and/or Spanish
- Academic or industrial experience working with large data-sets from varied sources on biomedicine or health sciences areas is a plus.