

Research Position in deep learning in the neuroimaging group of the Barcelonaβeta Brain Research Centre, Pasqual Maragall Foundation, Barcelona, Spain

Job Summary:

The Barcelonaβeta Brain Research Centre (BBRC), research institution of the Pasqual Maragall Foundation (PMF), invites applications for a full-time research position to develop deep learning methods to predict the onset of Alzheimer's disease and its preclinical stage based on neuroimaging and other wet biomarkers, as part of its clinical research program.

Principal Responsibilities:

The primary responsibility of this position includes coordinating a team of computer science specialists and providing them with guidance on the significance and utility of AD biomarkers (Imaging, CSF, blood) and other related information (genetic, demographic). The candidate will be working under the guidance of the Neuroimaging Group Principal Investigator. The aim of this project is to enhance prediction methods to anticipate the onset of early symptoms of AD and to enhance the prediction amyloid positivity among cognitively healthy individuals. This project will be carried out in the context of the Foundation's Alzheimer's disease clinical research and its flagship project, the Alzheimer and Families (ALFA). The ALFA project is a large longitudinal cohort of sons and daughters of Alzheimer's disease (AD) patients, to explore the preclinical stage of this condition with the aim of identifying novel risk factors and biomarkers. Within this study, over 2700 participants have already been involved and a comprehensive amount of data has been collected, including blood samples, cognition, mental health, quality of life and risk factors, as well as, neuroimaging procedures to assess brain function. As part of this effort, over 500 participants have already undergone an MRI protocol and PET imaging is underway. This study will enhance our knowledge of the processes involved before the onset of AD to develop interventions aimed to prevent or delay the disease. Furthermore, The BBRC is involved in European projects (IMI) and in international collaboration allowing the access to other cohorts' data.

The BBRC is a new research infrastructure, constituted by the Pasqual Maragall Foundation and with the participation of the Pompeu Fabra University, 100% dedicated to research on Alzheimer's disease. The new building will be completed by March 2016, and will contain excellent technical facilities including a research-allocated 3T MR scanner, dedicated to clinical research on neurodegenerative diseases.

BBRC is a research institute affiliated to Pompeu Fabra University and is also part of the Barcelona Biomedical Research Park (PRBB), a large research facility that hosts seven different research institutions related to biomedical research, including the Hospital del Mar Research Institute (IMIM), the Experimental and Health Sciences Department (CEXS) of the UPF, the Regenerative Medicine Centre of Barcelona (CMRB), and the Centre for Research in Environmental Epidemiology (CREAL), among others, in a multidisciplinary, collaborative and

stimulating international environment in close contact with a clinical setting, thus conducive to translational research.

Required Qualifications:

- PhD in Neuroscience, Medicine, Computer Science, Bioengineering or related disciplines (**It is mandatory for the candidates to hold a PhD**)
- **Proven experience** in modelling and/or deep learning is required.
- **Strong understanding** of the biological basis of AD and the course of AD biomarkers is needed.
- Experience in neuroimaging and/or genetic data analysis would be positively considered.
- Proven record of first authorship and co-authorship on scientific is required.

Skills

- Experience working with large and multidisciplinary data sets is required.
- Database manipulation skills, with strong attention to detail.
- Proven ability to lead and orientate a team of computer scientists
- Interest in joining a non-profit organization with a mission of high social impact.
- Strong interpersonal skills (empathic and focused team-worker).
- Ability to think independently and work collaboratively.

Benefits:

- Starting date: Second quarter 2016.
- The research position is scheduled initially for two years (open to renewal).
- Salary will depend on experience.

In order to apply:

To apply, please submit a single PDF file containing the following: 1) Cover letter describing research interests and relevant background; 2) CV with list of publications; 3) The names of three individuals who could provide reference letters.

All files or inquiries should be submitted electronically to: cminguillon@fpmaragall.org

Object: **RESEARCH POSITION DEEP LEARNING**

Deadline for submitting applications: **April 29th 2016.**