



ERASMUS+ TRAINEESHIP / PLACEMENT OFFER

Project title: Multimodal biomarkers to predict the onset and prognosis of neuropsychiatric illnesses

Project description:

KEYWORDS Genetics, neuroimaging, environment, clinical biomarkers, schizophrenia, autism, Alzheimer's, Parkinson's
CONTEXT Psychiatry and, to a lesser extent, neurology are still fields of medicine that take very little advantage of quantitative, biological and objective measurements – with a lot of trial-and-error and one-size-fits-all therapeutics. This may be why diagnosis, prediction of prognosis and response to treatment are relatively inaccurate, late and expensive. For example, about a third of Alzheimer's cases go on mis- or under-diagnosed; it is still undetected which one third of people with at-risk symptoms for schizophrenia go on to develop this chronic illness, and about one quarter of schizophrenia patients do not respond to their first line of treatment. Can we capitalize on the existing information in brain scans and other quantitative measurements to assist clinicians in deciding on patients' diagnosis or prognosis, earlier and more accurately than currently – so that the correct treatment can start as soon as possible?
TOOLS We are developing pattern recognition algorithms that can statistically predict the level of personalized risk of each new patient. To train these algorithms, we use pre-existing samples (free online or our own) containing neuroimaging and also genetic, psychological, environmental and clinical data. We use mainly MATLAB and machine learning tools
COLLABORATION King's College London (UK), IBEB-FCUL (PT), Radboud Uni Nijmegen (NL)...

Department: Physics

R&D Unit: IBEB (FCUL) - Biomedical Neuroscience Lab

Field of study: Biomedical and Cognitive Neuroscience

Supervisor: Diana Prata **Personal webpage:** <https://dpratalab.wordpress.com/>

Number of weeks offered: 24 **Within the months:** from October to July

Number of working hours per week: 35

Publication date: 14 / 10 / 2019 **Closing date:** 31 / 01 / 2020

Requirements

General:

- A very good academic record;
- Good writing and presentation skills;
- Good social and organisational skills;
- Very good proficiency in spoken and written English; knowledge of Portuguese language is an asset.

Specific:

- Level of education: Bachelor's or Master's degree in Neuroscience, Psychology, Medicine;
- Biomedical Engineering, Data Science, Statistics or IT;
- _____.

Applications

Applications should include the following information:

- a cover letter, including a description of your research interests and an explanation for why you are applying for this project;
- a curriculum vitae (CV);
- an official transcript of grades issued by your home institution;

and be submitted no later than 31 / 01 / 2020 via email to internacional@ciencias.ulisboa.pt.

Contacts

For inquiries regarding this project you are welcome to contact: diana.prata @ciencias.ulisboa.pt.

For inquiries regarding the application procedure you are welcome to contact: internacional@ciencias.ulisboa.pt.