



PHD CANDIDATE INTERESTED IN APPLYING FOR A FELLOWSHIP
IN NEUROSCIENCES
Vision and Control of Action

Group and project information

Applications are invited for two full-time pre-doctoral positions in the Vision and Control of Action Group <<http://www.ub.edu/viscagroup/>> at the University of Barcelona to undertake the PhD thesis under the supervision of Dr. Cristina de la Malla and Prof. Joan López-Moliner.

"Updating 3D world states from the optic flow" (PID2020-114713GB-I00 /AEI/10.13039/501100011033), led by Prof. Joan López-Moliner:

In this project we will use immersive environments combined with recent psychophysical approaches to devise new optic flow fields with structure consistent with natural images statistics to study (a) which are the minimal conditions of exposure/visual information that afford sensorimotor performance and (b) the perceptual capabilities to extract accurate metrics from optic flow fields with different statistical structure and under different conditions of eye movements behavior. The project involves combining psychophysics, eye movements and Bayesian tools to model human perceptual behavior and how beliefs about states in immersive environments are built. The results are potentially relevant for the design of virtual environments that aim at knowing the minimal visual information for maximizing the immersion experience and performance.

"Disrupting the prediction of visual motion" (PID2020-116400GA-I00 /AEI/10.13039/501100011033) led by Dr. Cristina de la Malla:

The main question this project addresses is what happens when velocity information, as the predictive component of the motion system, is disrupted. To study this, different paradigms (occlusions, luminance manipulations, and variability in objects velocity) that will impair perceiving the velocity at which an object moves will be used. Furthermore, this project is set from a perspective where observers are active components of the scene. That means that observers actively seek information in the environment that can help them succeed in their decisions and actions. As it has been shown by different studies, many of the movements we make (eye, and even head and torso movements) are directed at gathering information of objects or parts of the scene we have to interact with. For this reason, a second main objective of this project is to see whether disrupting velocity information leads to changes in the way we move to try to compensate for the loss of such information. This would allow us to know whether one prefers to update velocity estimates about how targets move rather than relying on predictions. We will take a multidisciplinary approach including psychophysics and decision-making paradigms as well as different techniques such as eye, head and hand movements recordings.





Offer Requirements

We seek excellent and highly motivated candidates with a background in psychophysics, experimental psychology, cognitive neuroscience, or similar. Prior research experience will be a plus especially in areas related to the projects (see below). We will also value programming experience (R and Python most preferred).

These fellowships are linked to two MICIN/AEI projects led respectively by Joan López-Moliner and Cristina de la Malla under the FPI program.

The positions will be funded for four years. Starting date: May/June 2022 (approx.). The salary is dictated by the Ministry (funding agency) and the minimum is 16,250 euros/year (first two years); 17,410 (third year) and 21,760 (fourth year).

Submission

Please, send an expression of interest (or any other enquiries about the positions) to (j.lopezmoliner@ub.edu) or (c.delamalla@ub.edu) depending on your interest.

Include the following: A brief C.V., a cover letter describing your research interests, and the contact of two academic references. If any, please also include a sample of your previous scientific experience (e.g. master's thesis, and/or other scientific outputs).

Support for applicants

The [Institute of Neurosciences](#), awarded with the seal of excellence Maria de Maeztu, offers support to applicants (eligibility check, info sessions, feedback on the draft proposal) and has recently launched a Mentoring programme (subject to availability).

Further information [Call](#)

Deadline: We will consider applications until one week before the official 2021 FPI call closes (2021 call to open soon). The actual application will be made through the Spanish Ministry of Science and Innovation, (FPI) scholarship program.

