

Post-doctoral Position at ISAE-SUPAERO

Title: Engagement characterization through joint EEG and fNIRS measurements

Context: This post-doctoral position is part of a collaborative research project between ISAE-SUPAERO and CEA-LETI.

Supervisors: Dr R. N. Roy, Dr S. Scannella and Pr F. Dehais (ISAE-SUPAERO, France), Dr A. Rasclé, Dr. S. Bonnet and Dr A. Planat-Chrétien (CEA-LETI).

Specialty: Cognitive Science, Biomedical Engineering, Neuroscience, Human Factors

Keywords: Engagement, Mental effort, Cognitive state monitoring, Electroencephalography (EEG), functional Near-Infra-Red Spectroscopy (fNIRS)

Objective: The main goal of this post-doctoral position is to study the neural correlates of various engagement states (Dehais et al., 2020) by using a combination of EEG and fNIRS sensors. In order to progress towards out-of-the-lab mental state monitoring, the minimal number, as well as the location of those sensors, to enable engagement assessment will be investigated. At least two experimental campaigns are envisaged: one classical in-lab campaign and one in a flight simulator (possibly a motion platform with a virtual reality headset).

Skills: The Post-doctoral researcher is expected to do scientific research in the described domain and to publish the results in scientific journals. Applicants should have completed (or be close to completion of) a PhD degree in Cognitive Science, Biomedical Engineering, Neuroscience, Human Factors or a comparable domain. A previous experience with using EEG and/or fNIRS would be appreciated. Programming skills would be a plus (e.g. python/matlab).

Location: The post-doctoral fellow will mainly work in the Neuroergonomics lab at ISAE-SUPAERO in Toulouse. She/he will also have to travel at least twice to Grenoble at the CEA-LETI.

Start & Duration: The position is available from January 1st for 1 year (the starting date can be delayed to February or March if needed or if the hiring process takes too much time).

Applications: may be submitted electronically to raphaelle.roy@isae-supaeero.fr and must include a cover letter, a curriculum vitae detailing educational background, research experience and at least two recommendation letters.

Deadline: Applications submitted by October 31st, 2020 will be given full consideration, although we will accept later applications if the position is not yet filled.

Dehais, F., Lafont, A., Roy, R., & Fairclough, S. (2020). A Neuroergonomics Approach to Mental Workload, Engagement and Human Performance. *Frontiers in Neuroscience*, 14, 268.