PhD position:

Image analysis and system management of a fluorescence microscope on large-scale volumetric samples

We are looking for a highly motivated PhD student to join the biophotonics group of Prof. Francesco Saverio Pavone at the European Laboratory for Non-linear Spectroscopy (LENS) in Sesto Fiorentino, Florence, Italy.

We are seeking a scientist with programming expertise to work on a processing pipeline in the field of high-resolution microscopy for the mapping of human and mouse brains. The selected candidate will develop custom software applications to properly integrate several functionalities and controls of fluorescence microscopes on large-scale volumetric samples. Moreover, the PhD program will focus also on data management, in particular: image post-processing, storage, automatic feature segmentation using artificial neural networks, and sharing of large datasets produced during the acquisitions.

The ideal candidate should possess a master's degree with a background in Physics/Mathematics/Optics/Engineering.

Finally, fluency in English, excellent communication skills, and the ability to work in a multidisciplinary international environment are required.

Essential
-Master's degree in physics, mathematics, engineering, optics, or a related discipline.
-Programming knowledge (Python, C++, Bash, Linux).

Highly appreciated
-Big-data handling experience.
-Experience in instrumentation: control software & electronics.

The successful applicant will be enrolled in the International Doctorate in Atomic and Molecular Photonics at LENS, University of Florence.

Contact information:
web page: http://bio.lens.unifi.it/.
dr. Giacomo Mazzamuto (mazzamuto@lens.unifi.it)

Monitoring of central and peripheral nervous system with biometric sensors during social interaction

We are offering a Ph.D. position in the laboratory of Dr. Francesco Pavone at the European Laboratory for Non-linear Spectroscopy (LENS) in Sesto Fiorentino, Florence, Italy.

We are looking for a figure that wants to carry out research on the effect of social interaction on multi-modal biosignals in interacting subjects. The candidate would have some expertise with the collection of biosignals in healthy human subjects such as Electroencephalogram (EEG), Electrodermal Activity (EDA), Heart Rate Variability (HRV) and Pupillometry. Background in bio-medical engineering/cognitive sciences is a preferred criterion.

The Ph.D. candidate will be part of a broad multidisciplinary team under the supervision of Dr. Pavone.

Please contact Dr. Francesco Pavone pavone@lens.unifi.it for preliminary application and additional information on the project.

Development of imaging systems for the study of the neural activity of mouse models in social interaction

We are offering a Ph.D. position in the laboratory of Dr. Francesco Pavone at the European Laboratory for Non-linear Spectroscopy (LENS) in Sesto Fiorentino, Florence, Italy.

We are looking for a figure that wants to carry out research on the effect of social interaction on the brain of awake freely moving animals using advanced optical neuroimaging tools based on calcium imaging. The ideal candidate would have some experience with animal work and a background in biomedical engineering/physics.

The Ph.D. candidate will be part of a broad multidisciplinary team under the supervision of Dr. Pavone.

Please contact Dr. Francesco Pavone pavone@lens.unifi.it for preliminary application and additional information on the project.