

About M2oBSI group: The research area of the Methods and Models for Biological Signals and Images (M2oBSI) group is biological and medical image reconstruction, processing and analysis. The aim is to develop signal and image processing methods for automatic analysis of 3D functional images.

The M2oBSI group is part of Department of Signal Processing in Tampere University of Technology.

The M2oBSI group is working in close collaboration with Turku PET Center. The M2oBSI group is also part of the AXPET collaboration among the 8 other international partners. The funding to our work comes from the Academy of Finland, the National Technology Agency, Tampere Graduate School in Information Science and Engineering and the Graduate School of Tampere University of Technology. The group is also in close collaboration with the companies Techila Technologies Ltd and ATOSTEK Oy as well as the European Organization for Nuclear Research (CERN).

The national node of INCF (International Neuroinformatics Coordinating Facility) is coordinated by M2obsi group leader Ulla Ruotsalainen.

In Methods and Models for Biological Signals and Images (M2oBSI) group under Department of Signal Processing in Tampere University of Technology, we are working on development of a new PET prototype. We are looking for a

M.Sc. thesis worker (m/f)

MSc. Thesis student will be responsible for performing Monte Carlo simulations on Geant4 platform and carry out simulations on the system with a radioactive source in order to characterize the system. Results of these simulations will be compared with the experimental ones acquired from the prototype.

We are looking for following (or equivalent) qualifications and experience:

- Bachelor's and master's studies in the field of medical physics/biomedical engineering
- Preferred experience in Monte Carlo simulation using Gate/Geant4 software
- Particular interest in positron emission tomography
- Experience in computer sciences and software development (C++)
- Ability to work independently, accurately and attentively
- Good communication skills and the ability to collaborate with other teams in an international and multidisciplinary environment in English
- Flexibility to adapt to new challenges

Your tasks in this position include:

- To participate in PET data acquisition measurements
- To acquire knowledge on PET simulations in Geant4

- To develop a Monte Carlo simulation on Gate/Geant4 platform using the hardware parameters used in design of current PET prototype
- To benchmark and compare Gate/Geant4 physics models against measurements

Interested? For more information about the position or application (CV, application letter, references) send an email to Defne Us (defne.us@tut.fi)

- Application deadline: 01/06/2014
- Position available from: 01/07/2014
- Working place: Department of Signal Processing, Tampere University of Technology, Tampere, Finland

Responsible advisors Co-advisors:

Ulla Ruotsalainen
Defne Us