

## Assistant/internship position in real-time fMRI neurofeedback

Real-time functional magnetic resonance imaging (rt-fMRI) has become a widely spread and well-known modality in functional MRI recordings. One of its applications, namely *neurofeedback* (NF), has also recently gained popularity in the neuroscience community, as it enables to use the MRI scanner in a brain-computer interface (BCI) fashion by providing neurofeedback in real-time to the scanned subject. More generally, neurofeedback allows the subject to exert and eventually further learn a volitional control on his own brain activity. Neurofeedback training is however intensive in time and personal investment, as the long-term goal is ultimately behavioral changes leading to clinical improvement.

Our lab (Medical Image Processing Lab) is currently running a large, multicentric clinical study on chronic tinnitus sufferers using rt-fMRI neurofeedback. In the scope of this study, we are looking for a motivated student or intern to assist and help during the scanning sessions with our participants. The position will be supervised and offers an opportunity to learn, hands-on, about a real-time fMRI setup and its usage, the MRI facility of Campus Biotech in Geneva, and the various imaging and processing techniques used in fMRI. Ultimately, the intern/assistant will have the responsibility to carry out his own fMRI recordings (always accompanied) and be part of an interdisciplinary team of researchers, from EPFL and the Wyss Center, jointly located at Campus Biotech, in Geneva, Switzerland.

This position is paid by the EPFL standards (teaching-assistant rate, 24 CHF per hour) and open to any motivated student willing to carry out extra work or a part-time internship for an extended period of time.

Position is open starting April 2018. This position is not eligible for academic credits.

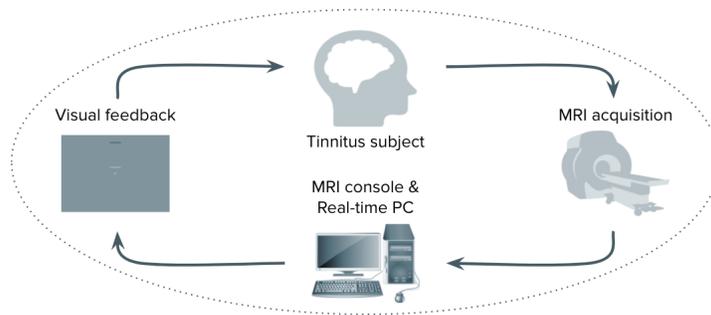


Figure 1: Simple illustration of the real-time fMRI neurofeedback loop used in our study.

### Requirements

- If student, ongoing MSc studies at EPFL
- Strong command of MATLAB (at least 2y+ experience), Python/Java
- Commitment to a weekly but variable schedule according to participants' needs
- Available on a regular basis at least 6h per week (on spot), during min. 4 months; could be during summer
- Willingness to learn about the rt-fMRI software and how to operate it
- Solid understanding of MRI basics (a plus)
- French, English (both advanced, required), German (a plus)

### Contact

To apply, please direct your shortly motivated application together with your CV to Nicolas Gninenko ([nicolas.gninenko@epfl.ch](mailto:nicolas.gninenko@epfl.ch)) and Dimitri Van De Ville ([dimitri.vandeville@epfl.ch](mailto:dimitri.vandeville@epfl.ch))