



# Lorraine PERRONNET

## PH.D. IN COMPUTER SCIENCE

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## Education

### Ph.D. in Computer Science

31th Dec., 2013 - 7th Sep. 2017

UNIVERSITÉ DE RENNES 1 – INRIA RENNES BRETAGNE ATLANTIQUE

Rennes, France

- Title: «**Combining electroencephalography (EEG) and functional magnetic resonance imaging (fMRI) for neurofeedback**»
- Directors: Christian BARILLOT and Anatole LECUYER
- Supervisors: Maureen CLERC and Fabien LOTTE
- Committee: Dimitri VAN DE VILLE, François CABESTAING, Olivier BERTRAND, François VIALATTE

### Master degree "Mathématiques, Vision, Apprentissage"

Sep. 2012 - Sep. 2013

ECOLE NORMALE SUPÉRIEURE DE CACHAN

Cachan, France

- Machine learning, computer vision, image processing
- Obtained with highest honours

### Exchange semester

Sep. 2009 - Dec. 2009

HONG KONG UNIVERSITY

Hong Kong, China

- Computational molecular biology, probabilistic methods & randomized algorithms, computer vision & image processing, computer graphics

### Engineering school

Sep. 2007 - Sep. 2010

ENSEEIH

Toulouse, France

- Computer science and applied mathematics

## Skills

### Fields of expertise

Neurofeedback, brain-computer interfaces, EEG, fMRI, ASL, image/signal processing, machine learning, software development

### Tools

EEGLab, Brain Analyzer, SPM, Latex

### Programming

Matlab, JAVA, C, HTML, CSS, Javascript, jQuery, shell

### Languages

Fluent in French and English, good knowledge in Spanish and German

## Experience

### Research intern

Apr. 2013 - Sep. 2013

UNIC – CEREMADE

Gif-sur-Yvette, France

- Development of a tool to automatically register histological layers and VSD data of the mouse barrel cortex
- Supervisors: Gabriel PEYRE and Isabelle FERZOU

### Software engineer

Mar. 2011 - Sep. 2012

SOLUTEC

Paris, France

- AMUNDI ASSET MANAGEMENT: migration of an application for portfolios administrative management
- MEDIAPOST: maintenance and development of an application for logistics and management of a geographic database with a GIS

### R&D intern

Apr. 2010 - Sep. 2010

BLUECHAM SAS

Nouméa, New Caledonia

- Maintenance and development of a modular web application for environmental decision making
- Conception of a module to animate temporal series of geolocated images

# Publications

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## PEER-REVIEWED JOURNAL PAPERS

Perronnet, Lorraine, Anatole Lécuyer, Marsel Mano, Fabien Lotte, Maureen Clerc, and Christian Barillot (2017b). “Learning 2-in-1: towards integrated EEG-fMRI-neurofeedback”. In: [Submitted, under revision]

Perronnet, Lorraine, Anatole Lécuyer, Marsel Mano, Elise Bannier, Fabien Lotte, Maureen Clerc, and Christian Barillot (2017d). “Unimodal Versus Bimodal EEG-fMRI Neurofeedback of a Motor Imagery Task”. In: *Frontiers in Human Neuroscience* 11, p. 193. DOI: 10.3389/fnhum.2017.00193

Mano, Marsel, Anatole Lécuyer, Elise Bannier, Perronnet, Lorraine, Saman Noorzadeh, and Christian Barillot (2017a). “How to build a hybrid neurofeedback platform combining EEG and fMRI”. in: *Frontiers in Neuroscience* 11, p. 140. DOI: 10.3389/FNINS.2017.00140

Perronnet, Lorraine, Maria Eugenia Vilarchao, Guillaume Hucher, Daniel E. Shulz, Gabriel Peyré, and Isabelle Ferezou (2015). “An automated workflow for the anatomo-functional mapping of the barrel cortex”. In: *Journal of Neuroscience Methods*, p. 11. DOI: <https://doi.org/10.1016/j.jneumeth.2015.09.008>

## PEER-REVIEWED BOOK CHAPTER

Perronnet, Lorraine, Anatole Lécuyer, Fabien Lotte, Maureen Clerc, and Christian Barillot (2016a). “Brain Training with Neurofeedback”. In: *Brain-Computer Interfaces 1: Foundations and Methods*. Ed. by Maureen Clerc, Laurent Bougrain, and Fabien Lotte. John Wiley & Sons, Inc., pp. 271–292. DOI: 10.1002/9781119144977.ch13

Perronnet, Lorraine, Anatole Lécuyer, Fabien Lotte, Maureen Clerc, and Christian Barillot (2016b). “Entraîner son cerveau avec le neurofeedback”. In: *Les interfaces cerveau-ordinateur 1: Fondements et méthodes*. Ed. by Maureen Clerc, Laurent Bougrain, and Fabien Lotte. John Wiley & Sons, Inc., pp. 271–292. DOI: 10.1002/9781119144977.ch13

## INVITED TALK

Perronnet, Lorraine, Anatole Lécuyer, Fabien Lotte, Maureen Clerc, and Christian Barillot (2017c). “Neurofeedback unimodal ou bimodal ? Intérêt de l’EEG et de l’IRMf”. In: *2ème journée nationale sur le neurofeedback*. ESPCI Paris, France, January 2017

## POSTERS

Perronnet, Lorraine, Anatole Lécuyer, Fabien Lotte, Maureen Clerc, and Christian Barillot (2017a). “EEG-fMRI neurofeedback of a motor imagery task”. In: *22nd Annual Meeting of the Organization for Human Brain Mapping (OHBM 2016)*. Palexpo Geneva, Switzerland, June 2017

Mano, Marsel, Elise Bannier, Perronnet, Lorraine, Anatole Lécuyer, and Christian Barillot (2017b). “Platform for Hybrid EEG-fMRI Neurofeedback Studies”. In: *22nd Annual Meeting of the Organization for Human Brain Mapping (OHBM 2016)*. Palexpo Geneva, Switzerland, June 2017

Perronnet, Lorraine, Anatole Lécuyer, Marsel Mano, Elise Bannier, Fabien Lotte, Maureen Clerc, and Christian Barillot (2016c). “HEMISFER: Hybrid Eeg-Mri and Simultaneous neuro-Feedback for brain Rehabilitation”. In: *1ère journée nationale sur le neurofeedback*. ICM Paris, France, January 2016

Bannier, Elise, Marsel Mano, Robert Stoermer, Isabelle Corouge, Perronnet, Lorraine, Jussi Lindgren, Anatole Lécuyer, and Christian Barillot (2015). “On the feasibility and specificity of simultaneous EEG and ASL MRI at 3T”. in: *Proceedings of ISMRM 2015*. Toronto, Canada, May 2015