Jérémy Frey

Researcher in computer science

contact

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languages

French: mother tongue
English: fluent
Spanish: basic

programming

object-oriented (Java, C++, C#)
multi-paradigm (python, JS)
imperative (C, Pascal)
functional (Lisp)
logic (Prolog)

skills

HCI (3DUI, TUI, VR, ...)
brain-computer interface
physiological computing
signal processing
machine learning
statistics
ergonomics
artificial cognition
natural language processing
SQL
unix
wearables
DIY enthusiast

hobbies

literature
photography
martial arts (pencak-silat)
swimming, running

interests

I explore how physiological computing can contribute to human-computer interaction and foster new communication channels among the general public. I came to think that the purpose of those technological artifacts is to enhance well-being and facilitate human relationships on the whole. Or at least this is the path into which I try to venture, hacking my way.

I currently hold a position of teaching assistant (ATER) in the university of Bordeaux and I work in Inria as a member of the Potioc research team.

education

2015 **PhD Computer Science** — University of Bordeaux

"Leveraging human-computer interactions and social presence with physiological computing". Advisors: Martin Hachet & Fabien Lotte. Research team: Potioc (Inria)

2011 **Master Cognitive Science** — University of Bordeaux

With honors, ranked second

2009 **Bachelor Computer Science** — University of Bordeaux

internships

2015 **Combining head-mounted displays with EEG** — Musae Lab, INRS, Montreal

Supervisor: Tiago H. Falk. Duration: 2 months.

2011 **Investigation of cognitive and motor deficits in a robot-embodied model of the basal ganglia** — IMN (institute of neurodegenerative deseases), University of Bordeaux

Supervisor: André Garenne. Duration: 10 months.

2010 **Conditioning robots** — EA-487 laboratory, University of Bordeaux

Supervisor: Jean-Marc Salotti. Duration: 10 weeks.

reviewing

Transactions on Computational Intelligence and AI in Game; Pattern Recognition; ACM Journal on Computing and Cultural Heritage; Affective Computing and Intelligent Interaction; ACM CHI

supervision

2015 **Maxime Daniel** — M.S. computer science, 2nd year, University of Bordeaux

Create a virtual environment that could validate the use of electroencephalography as an evaluation tool for 3D interactions. Duration: 6 months. Co-supervising with Immersion company.

2015 **Maxime Duluc** — last year in engineering school "Institut d'Optique Graduate School"

Objective: create an instrumented version of the tangible interface of electroencephalographic signals' visualization "Teegi". Duration: 6 months.

2015 **Alexis Gay** — M.S. design, 2nd year, University Bordeaux Montaigne

Objective: co-designing a tangible representation of inner states, "Tobe". Duration: 2 months. Co-supervising.

2014 **Aurélien Appriou** — M.S. cognitive science, 1st year, University of Bordeaux

Objective: investigate the use of a brain-computer interface as a real-time measuring tool of visual comfort during the viewing of stereoscopic images. Duration: 2 months.

2013 **Léonard Pommereau** M.S. cognitive science, 1st year, University of Bordeaux

Objective: establish a protocol that could be used to evaluate visual comfort during the viewing of stereoscopic images using electroencephalography. Duration: 2 months.

teaching

M.S. 2nd year **Software engineering** University of Bordeaux

10 hours

M.S. 1st year **Human factors and human-computer interaction** University of Bordeaux

6.25 hours

M.S. 1st year **Software engineering** University of Bordeaux

77 hours

B.S. 3rd year **Network and object oriented programming** University of Bordeaux

64 hours

B.S. 1st year **Programming** University of Bordeaux

60 hours

B.S. 1st year **Unix and introduction to programming** University of Bordeaux

74.67 hours

B.S. 1st year **Office applications** University of Bordeaux

13.33 hours

publications

articles in peer-reviewed journals

Classifying EEG Signals during Stereoscopic Visualization to Estimate Visual Comfort

Jérémy Frey, Aurélien Appriou, Fabien Lotte, Martin Hachet

Computational Intelligence and Neuroscience *(2016). 2016*

Émersions sensorielles

Jérémy Frey

CORPS *13 (2015) pp. 113–121. 2015*

international peer-reviewed conferences/proceedings

Tobe: Tangible Out-of-Body Experience

Renaud Gervais, Jérémy Frey, Alexis Gay, Fabien Lotte, Martin Hachet

TEI - ACM Conference on Tangible, Embedded and Embodied Interaction, 2016

Framework for electroencephalography-based evaluation of user experience

Jérémy Frey, Maxime Daniel, Julien Castet, Martin Hachet, Fabien Lotte

CHI - ACM Conference on Human Factors in Computing Systems, 2016

Remote Heart Rate Sensing and Projection to Renew Traditional Board Games and Foster Social Interactions

Jérémy Frey

CHI EA - ACM Conference on Human Factors in Computing Systems Extended Abstracts, 2016

Comparison of a consumer grade EEG amplifier with medical grade equipment in BCI applications

Jérémy Frey

International BCI meeting, 2016

Heart Rate Monitoring as an Easy Way to Increase Engagement in Human-Agent Interaction
Jérémy Frey
PhyCS - International Conference on Physiological Computing Systems, 2015

Continuous Mental Effort Evaluation during 3D Object Manipulation Tasks based on Brain and Physiological Signals
Dennis Wobrock, Jérémy Frey, Delphine Graef, Jean-Baptiste Rivière, Julien Castet, Fabien Lotte
INTERACT '15, 2015

Pointing in Spatial Augmented Reality from 2D Pointing Devices
Renaud Gervais, Jérémy Frey, Martin Hachet
INTERACT '15, 2015

Estimating Visual Comfort in Stereoscopic Displays Using Electroencephalography: A Proof-of-Concept
Jérémy Frey, Aurélien Appriou, Fabien Lotte, Martin Hachet
INTERACT '15, 2015

Review of the use of electroencephalography as an evaluation method for human-computer interaction
Jérémy Frey, Christian Mühl, Fabien Lotte, Martin Hachet
PhyCS - International Conference on Physiological Computing Systems, 2014

Teegi: Tangible EEG Interface
Jérémy Frey, Renaud Gervais, Stéphanie Fleck, Fabien Lotte, Martin Hachet
UIST - ACM User Interface Software and Technology Symposium, 2014

Assessing the zone of comfort in stereoscopic displays using EEG
Jérémy Frey, Leonard Pommereau, Fabien Lotte, Martin Hachet
CHI EA - ACM Conference on Human Factors in Computing Systems Extended Abstracts, 2014

book chapters

Raphaëlle N. Roy, Jérémy Frey. "Neurophysiological markers for passive BCIs (in press)". In: *Brain Computer Interfaces: Methods, Applications, Perspectives*. Wiley-ISTE, 2015. ISBN: 978-1-84821-826-0.

scientific outreach

2016 **Demonstration of "Tobe", a tangible out-of-body experience** "TEI '16 – Conference on Tangible Embedded and Embodied Interaction", Eindhoven, The Netherlands

2015 **Demonstration of "Teegi" during "robot maker's day"** ENSEIRB-MATMECA graduate school, Bordeaux

2015 **Demonstration of "Teegi", a tangible interface for electroencephalographic signals' visualization** IIT Techfest festival, Mumbai, India

2014 **Participation to the film debate "ExistenZ : faut-il avoir peur de la réalité virtuelle ?"** University of Bordeaux cultural service

2013 **Accompanying high-school students during a laboratory visit for "Fête de la science"** Bordeaux

2013 **Conference and panel "L'homme 'augmenté': notre avenir est-il 'cyborg' ?"** "Nancy Renaissance" event, Nancy

2013 **Conference "Demain les objets sont connectés ! – L'activité cérébrale pilote directement l'ordinateur : présentation de l'interface cerveau-ordinateur"** "Semaine Digitale" event, Bordeaux

2013 **Animating a workshop about brain-computer interfaces for high-school students** Bordeaux

2013 **Animating a stand presenting Inria research institute** "Aquitec" event, Bordeaux

2012 **Interview with high-school students about tactile interfaces** Bordeaux