Pierre Hieu Guilleminot

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Personal website	Google scholar	GitHub	Twitter
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EDUCATION

10.2019 - 04.2023 (expected)	**PhD in Neurotechnology** Imperial College London, UK - Centre for Neurotechnology, <u>Thesis</u>: *Neural Mechanisms of Audio Tactile Speech Integration* supervised by Prof. Tobias Reichenbach, Prof. Etienne Burdet
10.2018 - 09.2019	**MRes in Neurotechnology** (*Distinction*) Imperial College London, UK - Centre for Neurotechnology, <u>Thesis</u>: *Engineering Tactile Signals for Hearing Aids* supervised by Prof. Tobias Reichenbach, Prof. Etienne Burdet
10.2015 - 09.2018	**Msc in Engineering** (*Distinction*) Grenoble INP - Phelma, France - Department of Bioengineering <u>Thesis</u>: *A Robotic Supernumerary Thumb for Complex Musical Tasks* supervised by Prof. Aldo Faisal
10.2015 - 02.2016	**BEng in Engineering** Grenoble INP - Phelma, France - Department of Bioengineering <u>Main Courses</u>: *Physics, Electronics and Signal Processing*

RESEARCH EXPERIENCE

10.2017 - 08.2018	**Research intern** Brain And Behaviour Lab, UK <u>Duties</u>: Design and Control of a Robotic Supernumerary Finger. Experimental Setup and Analysis of finger usage for Complex Musical Tasks. Supervised by Prof. Aldo Faisal.
05.2016 - 08.2016	**Undergraduate Research assistant** Satoh Lab, Okayama University, <u>Duties</u>: DNA analysis to study the Axolotl regeneration mechanisms. Supervised by Prof. Akira Satoh

SKILLS & AREAS OF EXPERTISE

Quantitative background: Broad training in engineering, applied mathematics and statistics with focus on biosignal processing, computation modelling and data analysis. Demonstrable experience in developing and applying custom machine learning (scikit-learn) and deep learning (pytorch) frameworks.

Programming and computational background: Demonstrable strong programming skills in Python, including many specialized packages. Basic programming skills in C/C# and Labview. Demonstrable experience in high-performance computing and deep learning (pytorch).

Speech signal processing: Demonstrable experience in speech processing with particular focus on extracting speech features at an acoustic and phonetic level.

Neuroscience tools: Electroencephalography (EEG) Analysis and Modelling, Deep Learning, Multisensory Stimulation and Inertial Measurement Unit (IMU) for Human Machine Interface.

PUBLICATIONS

P Guilleminot, T Reichenbach (2021). Enhancement of speech-in-noise comprehension through vibrotactile stimulation at the syllabic rate. *PNAS, under review*.

A Shafti, S Haar, R Mio, **P Guilleminot**, AA Faisal (2021). Playing the piano with a robotic third thumb: Assessing constraints of human augmentation. *Scientific Reports*.

J Cunningham, A Hapsari, **P Guilleminot**, A Shafti, AA Faisal (2018) The Supernumerary Robotic 3rdThumb for Skilled Music Tasks. *Biorob 2020*

TEACHING & MENTORING

Research (co)supervision
Emilia Butters (2019-2020), Cosima Graef (2021-2021) - Audio-Tactile Neural Entrainment
Arianne R. de St-Victor (2020-2021) - Sensory Substitution of Touch by Hearing

Graduate teaching assistant
Imperial College London, UK - Departments of Bioengineering and Computing
Courses:
- Brain-Machine Interfaces (2018 - present) - BMI GTA Award 2021
- Reinforcement Learning (2021 - present)
- Probability and Statistics (2018 - present)
- Hearing and Speech Processing (2018 - present)
- Modelling in Biology (2019 - 2020)
- Maths II (2019 - 2020)

VOLUNTEERING & PUBLIC ENGAGEMENT

Co-organizer of the CDT Neurotechnology stand
Imperial Science Festival 2019
Description: Creating a real-time musical game based on EMG and EEG signals.
Creating rock-paper-scissors game based on speech recognition.

Bioeng Summer School Imperial College London
Imperial College London, 2021
Description: Promote science and engineering to highschool students.

Girls who ML - Lecture Series Winter 2021
Description: Volunteered to demonstrate workshops on neural networks.

LANGUAGES

English: Professional proficiency (IELTS C2 Level)　　**French**: Native speaker
German: Elementary knowledge (A2)　　**Japanese**: Elementary knowledge (A2)

HOBBIES

Theatre: Acting and Directing　　**Game Theory**: Automating solutions to various games