

Ciarán McGeady

Ph.D. candidate in biomedical engineering

contact

470, James Watt Building
University Avenue, Glasgow
G12 8QQ

+447875413987

c.mcgeady.1
@research.gla.ac.uk

R⁶ ciaran_mcgeady2

ciaran_mcgeady

research topics

biomedical signal processing
brain-computer interfaces
functional electrical stimulation
rehabilitation
neurofeedback
machine learning

skills

MATLAB, Python
Brainstorm, EEGLAB, MNE
LaTeX, Git

hobbies

literature
cinema
traveling
gym

interests

My research aims to address clinical problems with engineering techniques. I am interested in the non-invasive recording of brain activity to create rehabilitation strategies and assistive devices for people with neurological impairments.

education

- since 2018 **Ph.D. candidate in biomedical engineering** University of Glasgow, Glasgow, UK
Bimanual BCI strategies for neurorehabilitation
Current study: investigating the neural correlates underpinning unimanual and bimanual motor imagery from electroencephalography data for multi-class BCI applications
Supervisors: Dr Aleksandra Vučković & Dr Henrik Gollee
Research team: Centre for Rehabilitation Engineering
- 2013–2018 **M.Eng. with first class honours** University of Glasgow, Glasgow, UK
Biomedical Engineering
Year Representative 2015–2016
School of Engineering excellent student award for 2016, 2017 and 2018
- 2012–2013 **Mechanical engineering** Edinburgh Napier University, Edinburgh, UK
Finished with A average before transferring to the University of Glasgow
- 2006–2012 **Scottish highers and advanced highers** St Ninian's High School, Giffnock, UK
Specialisation in mathematics and physics

research experience

- 2017–2018 **Master's thesis** Technical University of Denmark (DTU), Lyngby, Denmark
Aim: determine feasibility of classifying two mental tasks at once with a BCI
Developed a hybrid brain-computer interface to record, process and classify SSVEP and sensorimotor rhythms, simultaneously, in 10 able-bodied participants.
Supervisor: Dr Sadasivan Puthusserypady
Duration: 7 months
Led to conference paper (see *publications*)
- 2016–2016 **NHS internship** Queen Elizabeth University Hospital, UK
Aim: investigate clinical effectiveness of wireless ECG monitoring of newborn infants
Worked with clinical scientists and medical doctors to collect and analyse ECG data. Collected qualitative data by interviewing ward nurses.
Supervisor: Dr Neil Patel
Duration: 4 months

experience

since 2019 **Graduate School representative for 2nd year**
Responsible for communicating graduate student feedback to school administrators on a regular basis. Other responsibilities include organising and playing an active role in campus events.

teaching assistant

Demonstrator for undergraduate and postgraduate lab sessions. I help prepare sessions and am involved in grading coursework.

since 2018	Signal Processing of Biosignatures 4 4th year undergraduate and MSc course 16 hours	University of Glasgow, Glasgow, UK
2018	Rehabilitation Engineering 4 4th year undergraduate and MSc course 18 hours	University of Glasgow, Glasgow, UK
since 2018	Engineering Skills 1 1st year undergraduate course 20 hours	University of Glasgow, Glasgow, UK
since 2020	Mechanical Design 2 2nd year undergraduate course 6 hours	University of Glasgow, Glasgow, UK

publications

articles in peer-reviewed journals

EEG correlates of self-managed neurofeedback treatment of central neuropathic pain in chronic spinal cord injury
Aleksandra Vuckovic, Manaf Kadum Hussein Altaleb, Matthew Fraser, Ciaran McGeady, and Mariel Purcell
Frontiers in neuroscience 13 (2019) p. 762. *Frontiers*, 2019

international peer-reviewed conference proceedings with full papers

A Hybrid MI-SSVEP based Brain Computer Interface for Potential Upper Limb Neurorehabilitation: A Pilot Study
Ciarán McGeady, Aleksandra Vučković, and Sadasivan Puthusserypady
2019 7th International Winter Conference on Brain-Computer Interface (BCI), 2019

Awards

2020	Three Minute Thesis Finalist 2020 <i>Presentation title:</i> Listening to Butterflies with Brainwaves. Final postponed.
2020	Graduate School Mobility Scholarship Recipient of travel grant aimed at promoting international collaborations

references

Dr Aleksandra Vučković
PhD Supervisor
Division of Biomedical Engineering
University of Glasgow

Phone: +44 141 3303251
E-mail: aleksandra.vuckovic@glasgow.ac.uk

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Dr Sadasivan Puthusserypady
MEng Supervisor
Department of Electrical Engineering
Technical University of Denmark

Phone: +45 45253652
E-mail: spu@elektro.dtu.dk