

Ciarán McGeady

Ph.D. candidate in biomedical engineering

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research topics

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

skills

MATLAB, Python
Brainstorm, EEGLAB, MNE
L^AT_EX, 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 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

other 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
20 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
20 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 McGeedy, 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 McGeedy, Aleksandra Vučković, and Sadasivan Puthusserypady

2019 7th International Winter Conference on Brain-Computer Interface (BCI), 2019

awards

2020

Three Minute Thesis (3MT®) 2020: 1st Place Winner

Presentation title: Listening to butterflies with brainwaves

2020

Graduate School Mobility Scholarship

Recipient of travel grant aimed at promoting international collaborations

academic membership

since 2019

BCI Society

research mentorship

Students under my mentorship.

Master of Engineering (MEng)* / Science (MSc) project

Basel al Shihabi	May 2020 - August 2020
Daniels Vasiljevs	May 2020 - August 2020
Jordan Diven*	June 2019 - Jan 2020

Bachelor of Engineering (BEng) final year project

Ahsan Ahmad	Nov 2019 - May 2020
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references

Dr Aleksandra Vučković

PhD Supervisor
Division of Biomedical Engineering
University of Glasgow

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Dr Sadasivan Puthusserypady

MEng Supervisor
Department of Electrical Engineering
Technical University of Denmark

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