SIMON MARCHANT

CEng MSc MEng MIET MIPEM

RESEARCH INTERESTS

Translational Clinical Science
Neuroimaging
Machine Learning
Medical Device Development

EXPERIENCE

Postdoctoral Research Associate Jan 2024 - present
Oxford University

I am currently translating into practice the analysis software which I wrote during my DPhil, having won postdoctoral funding from the NIHR to do so. I aim to make this software available and usable for clinicians and researchers in neonatal neuroscience.

DPhil Student Oct 2019 - Jan 2024
Oxford University

I studied my DPhil (PhD) in the paediatric neuroimaging group of Oxford University, where I developed new, clinically-viable methods of detecting pain in newborns. Currently, no methods of detecting infant pain are approved by medical regulatory agencies, and as such there is a lack of pain relief available for newborns. I developed new data processing and analysis techniques to provide these measures for use in clinical trials and at the cot-side.

Clinical Scientist May 2017 - Oct 2019
Orthotic Research & Locomotor Assessment Unit

As a clinical scientist, I had a split clinical and technical role. In my technical role I wrote software to process and display electromyographic data for interpretation. In my clinical role I collected and processed complex movement analysis data from patients and research participants, and identified and explained potential artefacts to multidisciplinary team meetings. I set up lunchtime seminars for technical staff and I was often called on to solve technical issues in the two full-time movement analysis labs that the unit runs.

Trainee Clinical Scientist Aug 2014 - May 2017
National Health Service

On the competitive, funded, 3-year NHS Scientist Training Programme, I undertook supervised clinical work. I also conducted a study into haemodialysis clearance of dialysis outpatients, was involved in the initial evaluation of new medical devices and wrote new commissioning guidelines.

EDUCATION

DPhil (PhD) in Paediatric Neuroimaging (anticipated) 2019 - 2024
Oxford University

MSc in Clinical Science (Clinical Engineering) 2014 - 2017
King's College London
Distinction

MEng in Biomedical Engineering 2010 - 2014
University of Sheffield
First Class with Honours

QUALIFICATIONS

Chartered Engineer
Institute of Engineering & Technology

Clinical Scientist (clinician)
Health & Care Professions Council

AWARDS AND FUNDING

Postdoctoral Internship Award — *£18,900*	National Institute of Health Research	2023
Postgraduate Research Award — *£2,500*	Institute of Engineering & Technology	2023
Turing Community Award — *£1,500*	Turing Institute	2022
Industrial Partnership — *£11,500 p.a.*	Reckitt Benckiser	2020
EPSRC Studentship — *fees & stipend*	Oxford University	2019
Young Professional Bursary — *conference expenses*	Posture & Mobility Group	2016
Steel Circle membership for contribution to student life	University of Sheffield	2015
Sheffield Graduate Award for extracurricular activity	University of Sheffield	2014
Poster Prize for final year project	University of Sheffield	2014
SURE prize — *stipend*	University of Sheffield	2013

TEACHING

Software Engineering	2020 - present
University of Oxford	*Demonstrator*
Mock OSFA Examinations	Mar 2019
NHS Healthcare Science Network	*Examiner*
Data Quality & Artefacts	May 2018-19
Orthopaedic Institute	*Guest Lecturer*
Lunchtime Teaching	2017 - 2019
Robert Jones & Agnes Hunt Orthopaedic Hospital	*Organiser*

COMMITTEES

Equality, Diversity & Inclusion Committee 2021 - 2022
Doctoral Training Centre, Oxford *Student Representative*

College Ball Committee 2020
Linacre College, Oxford *Chair*

Scientific Programme Committee 2018
Medical Physics & Engineering Conference *Session Chair*

Bioengineering Industrial Advisory Board 2018 - present
University of Sheffield *Committee Member*

Rehabilitation & Biomechanics Special Interest Group 2015 - 2018
Institute of Physics & Engineering in Medicine *Committee Member*

I drafted responses to government consultations, wrote a magazine article, and designed a public information leaflet on specialist seating.

Sheffield Bioengineering Society 2012 - 2013
University of Sheffield *President*

As president, I led the team to double membership numbers and improve the society finances. I built the society website and was nominated by the team for the President of the Year Award. I also organised the finances for the faculty ball.

OUTREACH

Bedtime Stories for Very Young Engineers 2021
Royal Academy of Engineering *Storytelling engineer*

As part of a RAEng project to produce stories to interest 2-4 year-olds in engineering, I wrote and narrated a short children's story about Lara the Llama who wanted (and managed) to fly.

Work Experience Supervision 2015 - 2020
Various *Supervisor*

I have arranged and supervised 4 work experience visits for students interested in healthcare science, and led a visit from undergraduates at a local university.

Big Bang Fair 2019
Young Scientists & Engineers Fair *Outreach volunteer*

Biomedical Engineering Careers Talks 2016-17
University of Sheffield *Guest Lecturer*

I'm An Engineer, Get Me Out Of Here 2015
Royal Academy of Engineering *Outreach volunteer*

PUBLICATIONS

Marchant S, Pillay K, van der Vaart M, Baxter L, Fitzgibbon S, Hartley C, Slater R. An automated artefact detection algorithm for infant EEG. In review.

Hauck A, van der Vaart M, Adams E, Baxter L, Crankshaw D, Dhami A, Evans Fry R, Freire M, Hartley C, Mansfield R, **Marchant S**, Monk V, Moultrie F, Peck M, Robinson S, Yong J, Bhatt A, Poorun R, Cobo M, Slater R. Effect of parental touch on relieving acute procedural pain in neonates and parental anxiety (Petal): a multicentre randomised controlled trial. In review.

Usman F, **Marchant S**, Baxter L, Salihu H, Aliyu M, Adams E, Hartley C. The relationship between neonatal respiration and EEG-recorded brain activity: a systematic review. In review.

Baxter L, Hauck A, Bhatt A, Cobo M, Hartley C, **Marchant S**, Poorun R, van der Vaart M, Slater R. Statistical analysis plan for the Petal trial: the effects of parental touch on relieving acute procedural pain in neonates. Wellcome Open Research. 2023 Aug.

Marchant S, Michael S, Milner L, Tang KT. Effects of timing parameter changes on the gait of functional electrical stimulation users with drop foot. *Journal of rehabilitation and assistive technologies engineering*. 2019 Jul; 6.

PRESENTATIONS

Translating a neurophysiological metric for infant nociception into a clinically-useful tool 2023
jENS Conference *Poster*

Improving the usability of EEG in clinical trials: an automated artefact detection algorithm 2023
International Newborn Brain Society Conference *Poster*

Parameter changes in Functional Electrical Stimulation 2017
Rehab Week Conference *Poster*

Online Clearance Monitoring as an indicator of dialysis adequacy 2016
MEIbioeng Conference *Poster*

Developing FES clinical commissioning guidelines 2015
IFESS Conference *Oral*