

Qualifications

Queen Mary University of London

PhD, Robotics 2018 – 2023

- Developed interactive haptic interfaces for real-time robot operation in difficult environments
- Co-designer of a 3D printable face shield visor for COVID-19 protection, the second such product to gain medical certification in the UK. Over 3,000 of these visors were produced and used in London hospitals.
- Supported and formed collaborations between the Robotics Centre and Psychology and Medicine
- Co-founded a startup company, Human Robotix Ltd. to commercialize parts of my research
- Webmaster for the Centre for Advanced Robotics public website
- Awarded the Queen Mary Diploma of Researcher Development
- Funded by the EPSRC, IEEE and Queen Mary University of London

Imperial College London

MEng, Electronic and Information Engineering, Upper Second-Class Honors *Conferred August 2018*

Master's Project

- Developed a fingertip tactile display to impart a tactile representation of printed text, shape and colour
- Presented at the Imperial College Festival and IEEE WorldHaptics 2021
- Awarded 85% mark and the Eric Laithwaite prize for outstanding innovation in an individual project

Projects

- Robotic walking aid; Smart coffee machine (*sponsored by IBM*); Single-camera 2D-3D video conversion

Selected Publications

(Co-)author or inventor of 1 patent (lead inventor) and 15 peer-reviewed publications (9 first author | 1 senior author)

- 3 first author papers in review: J. Field Robot., IEEE/ASME Trans. Mechatronics, APL Bioeng. [invited]
- **J. Brown**, F. Bello, "Design and Characterisation of Particle Jamming-Based Variable Stiffness Displays using Non-Pneumatic Actuators," IEEE Haptics Symposium, Long Beach, 2024. (**Best paper honorable mention**)
- **J. Brown**, I. Farkhatdinov, "Soft Haptic Interface based on Vibration and Particle Jamming," IEEE Haptics Symposium, Washington DC, 2020. (**Best paper finalist**)
- **J. Brown**, A. B. Clark, B. Omarali, "Design and Implementation of a Polar-type 3D Printer for Highly Optimised Manufacturing of Prosthetic Sockets in LMICs", Hamlyn Symposium on Medical Robotics (HSMR), London, 2024
- **J. Brown** and I. Farkhatdinov, "Shape-Changing Touch Pad based on Particle Jamming and Vibration," 2021 IEEE World Haptics Conf. WHC 2021, p. 337, 2021
- Full list available at <https://www.jb-robotics.com/publications> and [Google Scholar](#)

Selected Funding (Total funding approx. £225,000)

- Imperial College Surgery and Cancer Seed Fund, ~£5,500 2024
- Imperial College-MIT Global Seed Fund, ~£35,000 2024
- MRC UK-Korea Biomedical Partnering Award, UKRI, ~£100,000 2023
- Dame Julia Higgins Postdoctoral Collaboration Award, Imperial College London, £2,900 2023
- Bart's and the London Charity Advancing Healthcare Grant, ~£50,000 2021
- Globalink UK-Canada Doctoral Exchange, UKRI & Mitacs, ~£12,000 2020
- IEEE Innovation in Haptics Award, IEEE Technical Committee on Haptics, \$2,500 2018

Awards

2nd place - UK Best PhD in Robotics Award (2024); Honorable mention for best paper, IEEE Haptics Symposium (2024); Engagement and Impact - Local Champion Award, QMUL (2021); Best paper nominee, IEEE Haptics Symposium (2020); Best poster, Materials Research Institute Christmas Symposium (2019); Imperial College Eric Laithwaite Prize (2018); Imperial College President's Scholarship (2014); Bloodhound SSC Award for Excellence in Engineering (2013); Advanced STEM Leaders Award (2013); Rolls-Royce Arkwright Engineering Scholarship (2012)

Invited Activities

- Invited presentation at TAROS2024 Best UK PhD in Robotics Session
- Invited speaker at a EuroHaptics 2024 workshop - <https://www.youtube.com/watch?v=2DWNzQPqhn8>
- Invited interactive demo at Haptics Symposium 2024 Cross-Cutting Challenges session
- Invited guest lecture on Haptics, MS Design and Control of Medical Robots, Seoul National University, 2024
- Invited seminar at the Healthcare Robotics (HeRo) Lab, Seoul National University, 2024
- Invited speaker, Korea-UK Workshop on Medical Robotics, 2024
- Invited seminar at the Laboratory of Intelligent Systems, EPFL, 2023
- Panellist for Imperial College Dame Julia Higgins Collaborative Grant
- Reviewer for IEEE Transactions on Haptics, Robotics and Automation - Letters, ICRA 2020, EuroHaptics 2020, ICRA 2021, EuroHaptics 2022, HAID 2022, RO-MAN 2024

Teaching

- Labs/tutorials: Skills for electronics engineering, Skills for robotics engineering, Robotics design and build project, Interaction design
- Supervision: 19 MRes, MEng, MSc, BSc and iBSc project students working on topics ranging from haptics to biomaterials. 4 prize-winning students, 2 pursuing/pursued a related PhD
- Fellowship of the Higher Education Academy (FHEA) under consideration

Technical Skills

- Excellent MCAD and ECAD skills including Solidworks and Autodesk Fusion 360, Inventor and Eagle
- Wide experience of CNC manufacturing including 3D printing (FDM and SLA), laser cutting and machining
- Sound knowledge of programming in C/C++, Python, MATLAB, SQL and several RISC assembly languages
- Extensive experience using the ARM mbed, Arduino and Raspberry Pi embedded computing/control platforms

Professional Activities

- Co-Chair, Imperial College Special Interest Group on Extended Reality (XR) in Education (2023-present)
- Co-organizer, "From virtual contact to clinical impact: exploring the role of touch in medicine and surgery" - a workshop presented at the Hamlyn Symposium on Medical Robotics (2024)
- Chair, PhD Student Representatives Committee, QMUL EECS, (2020-2022)
- PhD Student Representative, QMUL Robotics, (2019-2021)
- Web Chair, TAROS 2019 conference (2019)

Positions Held

- Haptics Research Associate – Department of Surgery and Cancer, Imperial College London (2023-present)
- Co-founder & Director of Engineering – Human Robotix Ltd. (2021-present)
- Visiting Researcher – Department of Mechanical Engineering, Seoul National University (2024)
- Visiting Researcher – Royal London Dental Hospital (2020-2023)
- Teaching Assistant – Various departments, Queen Mary University of London (2019-2023)
- Visiting Researcher – Electronic Engineering and Computer Science, York University, Canada (2022)
- Research Assistant – Department of Bioengineering, Imperial College London (2020-2021)
- Research Assistant – Various departments, Queen Mary University of London (2019-2020)