

## Research Experience

- Visiting Scholar – Mechanical Engineering, Massachusetts Institute of Technology (2025-present)  
*Investigating soft thermotactile display technology for use in cardiovascular medical simulations*
- Haptics Research Associate – Department of Surgery and Cancer, Imperial College London (2023-present)  
*Developing haptic simulations of medical examinations for use in medical schools and surgical units. PI and project lead for the POLAR: Prosthetics and Orthoses for Limited Access Regions project.*
- Co-founder & Director of Engineering – Human Robotix Ltd. (2021-present)  
*Leading the design and manufacturing of robots for use in rehabilitation and neuromechanics research.*
- Visiting Researcher – Department of Mechanical Engineering, Seoul National University (2024)  
*Designed and tested softness- and shape-changing haptic interfaces for use in surgical simulation.*
- Visiting Researcher – Royal London Dental Hospital (2020-2023)  
*Designed a 3D printed, personalisable stent for use in odontogenic cyst decompression, now in routine clinical use. Developed a method for 3D printing biocompatible ceramic materials for use in dental restoration in collaboration with a market leader in 3D printing (technical details under NDA).*
- 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)

## Qualifications

### PhD, Robotics – Queen Mary University of London 2018 – 2023, awarded Feb 2024

- Developed soft haptic interfaces for real-time robot operation in difficult environments
- Awarded 2<sup>nd</sup> place in the UK Best PhD in Robotics Award competition 2023
- 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.
- Initiated collaborations between the Robotics Centre and Departments of 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

### MEng, Electronic and Information Engineering, 2.1 (Hons) – Imperial College London 2014-2018

- Developed a fingertip tactile display to produce 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 the individual project
- Presented undergraduate research projects to researchers and students from other departments as well as members of the public at three Great Exhibition Road Festivals (formerly the Imperial College Festival)

## Selected Publications

(Co-)author or inventor of 1 patent (pending) and 17 peer-reviewed publications (11 as first author, 1 in-press)

- **J. Brown**, I. Farkhatdinov, M. Jenkin, '[ROV Teleoperation in the Presence of Cross-Currents using Soft Haptics](#)', Journal of Field Robotics, Wiley, Feb. 2025.
- **J. Brown**, F. Bello, '[Hardness changing tactile displays for simulating the feel of organic tissues](#)', Frontiers in Robotics and AI, vol. 11. Frontiers Media SA, Aug. 20, 2024.
- **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)**

Full list (including links and PDFs) available at <https://www.jb-robotics.com/publications> and [Google Scholar](#)

## Selected Funding (Total funding approx. £230,000)

- Imperial College StudentShapers<sup>^</sup>, £5,220 2024
  - Imperial College Surgery and Cancer Seed Fund<sup>\*\*^</sup>, £5,540 2024
  - Imperial College-MIT Global Seed Fund<sup>^</sup>, ~£35,000 2024
  - MRC UK-Korea Biomedical Partnering Award<sup>^</sup>, UKRI, ~£100,000 2023
  - Dame Julia Higgins Postdoctoral Collaboration Award<sup>\*\*^</sup>, Imperial College London, £2,900 2023
  - Bart's and the London Charity Advancing Healthcare Grant<sup>\*</sup>, ~£50,000 2021
  - Globalink UK-Canada Doctoral Exchange<sup>^</sup>, UKRI & Mitacs, ~£12,000 2020
  - IEEE Innovation in Haptics Award<sup>\*\*^</sup>, IEEE Technical Committee on Haptics, \$2,500 2018
- \* Co-I | \*\* PI | ^ Lead writer/proposer

## Awards

2<sup>nd</sup> place – 2023 UK Best PhD in Robotics Award (2024); Runner up for best poster, HSMR 2024 workshop on Haptics in Medicine (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 TAROS 2024
- Invited presentation at a EuroHaptics 2024 workshop - <https://www.youtube.com/watch?v=2DWNzQPqhn8>
- Invited interactive demo at Haptics Symposium 2024 Cross-Cutting Challenges session on soft haptics
- Invited guest lecture on Haptics in Medicine, Seoul National University, 2024
- Invited seminar at the Healthcare Robotics (HeRo) Lab, Seoul National University, 2024
- Invited presentation, Korea-UK Workshop on Medical Robotics, 2024
- Invited seminar at the Laboratory for Intelligent Systems, EPFL, 2023
- Reviewer and award committee member 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, RoboSoft 2025

## Professional Activities

- Co-chair, Imperial College Special Interest Group on Extended Reality (XR) in Education (2023-present)
- Organising committee, IEEE Haptics Symposium 2026 (2025-2026)
- Co-organizer, workshop on haptics in medicine 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)

## Teaching

- Fellowship of the Higher Education Academy (FHEA) awarded January 2025
- Labs/tutorials: Skills for electronics/robotics engineering, Robotics design and build project, Interaction design
- Supervision: 19 MRes, MEng, MSc, and (i)BSc project students. 4 prize-winning students, 2 pursuing PhDs.
- Leading the development of digital education tools for training Imperial College medical students in physical examination, surgical skills, dermatology and clinical communication
- Regularly supports students attending their first conferences, such as securing funding for three students to present their projects at ICRA@40 in Rotterdam