



Education

2020-24 **Bioengineering Research PhD, Imperial College London**
Supervisor: Professor Dario Farina

2016-20 **MEng Biomedical Engineering, Imperial College London**
First Class Honours (78.14), Dean's list, Best poster award

Research Experience

2020-24 **PhD project:** Shared-autonomy **locomotion** using intent-driven, **compliant robotic** legs on **challenging terrain** in simulated **RL** environments. Collected experimental motion and biosignal datasets and processed them with TCNs to extract high-level user intent. **3 first-author articles published, 2 more under review. 8+ second-author articles, including in Nature Communications. 1st place presentation in category at iCBEI22.**

Co-first author of the **NeurIPS** competitions MyoChallenge24-26, designed scenes for RL in humanoid control tasks. **Published in NeurIPS 2025 to D&B track, and ICORR 2025.**

2019-20 **MEng:** Projects included parallelised image processing algorithms with CNNs for brain-cell counting and building accessible UI for controlling various assistive technology. Built my own data loading, systematic training and documentation systems for my thesis project; EMG based **kinematics prediction** and **activity classifier**. **Projects presented at AAATE18, BioMedEng19, BiomedEng22 conferences.**

Literature reviews: In topics of human stance control, upper limb rehabilitation exoskeletons and simulated bionics.

Work Experience

2025 - **Postdoctoral Researcher, Imperial College/Meta Wearable Neural Interfaces Research Centre:** Developed neuromechanical models of the hand, and control policies using RL. [Built closed-loop neural signal synthesis pipeline in massively parallelized simulated environments.](#)

Led Imperial's contributions on multiple >€500k ERC **grant applications** that met excellence thresholds. Provided literature review, **work package and KPI planning**, risk assessment, and **budgeting**. Projects included compliant and elastic sensor development for human-robot interfacing, human-robot collaboration in hazardous work environments, **robotic locomotion learning** project for rehabilitation. Proposed, secured and managed **ethics approvals** for multiple studies involving patients.

2023-25 **Contractor, Google DeepMind:** Developed features for the Unity plugin to the open-source MuJoCo physics engine and provided bug-fixes, community moderation and user support.

2023 **Research Intern, Artanim Foundation:** Investigated social spacing in virtual environments. Developed tools and processes for physics-based animation and locomotion simulation. Implemented interactive environments in VR. Planning and performing full-body, multi-actor motion capture sessions.

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[Google Scholar](#)

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2017-24 **Teaching assistant:** Leading seminars and tutorials, creating and presenting lecture content, planning and grading coursework. Lead TA for Human Neuromechanical Control and Learning.

Skills

- **Technical skills:** Signal processing, human-machine interfacing, supervised and reinforcement learning (TF and PyTorch), information theory, gait analysis, motion capture, optimal control, app development
- **IT:** Python (+Jax), C#, Unity, Arduino, Blender, Git, C++, ROS
- **Entrepreneurship:** Training on acquiring patents, managing and protecting IP, regulations (MDR) and tech transfer. Worked with **startups/companies** at different stages (e.g. Neubond, Artanim), making simulations and visualisations they used for fundraising and outreach.
- **Communication:** Experience as teaching assistant, PhD student society chair. Designing and leading **three-day workshop about simulation and neuromechanics** at Summer School of Neurorehabilitation 2023-26.
- **Supervision:** Contributed to and advised student projects involving ankle **exoskeleton control, tactile sensing**, IMU based motion capture, uncertainty modelling, **vision-based robotics**.

Other Interests and Successes

- Released an open-source [RL-based locomotion learning toolkit](#), [written interactive tutorials](#) and a [robotics modelling utility](#). Contributed model of compliant mechanism to [one of the largest repositories of robotic models](#).
- Team lead in the open-source project MyoSuite, developed simulated scenes for RL in musculoskeletal control tasks and implemented features to utilise hardware acceleration for simulation.
- Contributed peer reviews to journals including Science Robotics, multiple IEEE journals and Wearable Technologies.
- Organising committee member of CDT Prosthetics & Orthotics Conference 2021.
- Courses in creative writing, sound technology, philosophy.
- Participated in the EUROBENCH project, using a standardised benchmarking framework to evaluate locomotion with an exoskeleton.
- Running for charity, playing guitar, dragon boat paddling

Key publications

Hodossy, B.K. and Farina, D., 2023. Shared Autonomy Locomotion Synthesis With a Virtual Powered Prosthetic Ankle. IEEE Transactions on Neural Systems and Rehabilitation Engineering

Hodossy, B.K., Guez, A.S., et al., 2024. Leveraging high-density EMG to investigate bipolar electrode placement for gait prediction models. IEEE Transactions on Human-Machine Systems.

Wang, H., Tan, C.K., Hodossy, B., Lyu, S., Schumacher, P., et al., 2026. MyoChallenge 2024: A New Benchmark for Physiological Dexterity and Agility in Bionic Humans. Advances in Neural Information Processing Systems, 38.

An extended list of my publications is available on [Google Scholar](#).