

Toby Howison
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Education	PhD in Robotics and Machine Learning University of Cambridge, UK	2017 - 2021
	BEng + MEng in Mechanical Engineering (1st Class) University of Bristol, UK	2013 - 2017
	Study Abroad Year McGill University, Canada	2015 - 2016
Industry Experience	Deep Learning Developer (Internship) The Mathworks, Cambridge, UK - Development cycle for new neural network layer implementation - Example code for various networks	06-08/2020
	Multibody Simulation Developer (Internship) The Mathworks, Natick, USA - Simulation tools for humanoid robotics - Implementation of deep reinforcement learning for locomotion	07-10/2019
	Control Systems Engineer (Internship) MBDA Missile Systems, Bristol, UK - Simulation analysis of aeronautical systems	06-08/2015
Academic Experience	Lead Guest Editor: Special Issue on the 2021 Workshop on Embodied Intelligence Artificial Life	2021
	Guest Editor: Bio-Inspired Embodied Intelligence Special Issue Frontiers	2021
	Program Committee: 2021 International Workshop on Embodied Intelligence University of Cambridge, UK	01-03/2021
	Reviewer Artificial Life	2020
	Evolutionary Computation	2020
	IEEE International Conference on Robotics and Automation (ICRA)	2020
	IEEE Robotics and Automation Magazine	2019
Visiting Researcher Centre for Intelligent Machines, McGill University, Canada	06-07/2017	
Undergraduate Research Trainee Centre for Intelligent Machines, McGill University, Canada	05-08/2016	
Research Placement Energy & Power Group, University of Oxford, UK	06-08/2014	

**Journal
Publications**

Howison, T., Hughes, J., & Iida, F. (2021). Morphological sensitivity and falling behaviours of paper V-shapes. **Artificial Life** (Forthcoming: accepted May 2021).

Howison, T., Hauser, S., Hughes, J., Iida, F. (2021). Reality-assisted evolution of soft robots through large-scale physical experimentation: a review. **Artificial Life**.

Howison, T., Hughes, J., Iida, F. (2020). Large-scale automated investigation of free-falling paper shapes via iterative physical experimentation. **Nature Machine Intelligence**.

Howison, T., Hughes, J., Giardina, F., Iida, F. (2019). Physics driven behavioural clustering of free-falling paper shapes. **PloS one**.

Kanada, A., Giardina, F., Howison, T., Mashimo, T., Iida, F. (2019). Reachability improvement of a climbing robot based on large deformations induced by tri-tube soft actuators. **Soft robotics**.

Li, W., Howison, T., Angeles, J. (2018). On the use of the dual Euler–Rodrigues parameters in the numerical solution of the inverse-displacement problem. **Mechanism and Machine Theory**.

**Conference
Proceedings**

Howison, T., Hughes, J., Iida, F. (2020). Morphologically programming the interactions of V-shaped falling papers. **Artificial Life Conference 2020**.

Howison, T., Iida, F. (2020). Automatically designing the behaviours of falling paper: the emergence of non-trivial behaviours via interaction with the physical world. **Genetic and Evolutionary Computation Conference 2020**.

Howison, T., Giardina, F., Iida, F. (2020). Augmenting self-stability: height control of a Bernoulli ball via bang-bang control. **International Conference on Robotics and Automation 2020**.

**Undergraduate
Research**

Howison, T., Godwin, T., Jacobs, B., Lim, J., Georgopoulos, P., (2017). Real-time dimensionality reduction on visual data with application to landing a quadcopter. **Masters thesis**, University of Bristol, UK.

Howison, T., Angeles, J., (2016). The application of dual algebra to the numerical implementation of the inverse-kinematics of six-revolute serial robots. **Undergraduate thesis**, Centre for Intelligent Machines, McGill University, Canada.