Spencer Wilson +44 7490 390517 spencer.wilson@ucl.ac.uk

EDUCATION

Class of 2022 — University College London
PhD Neuroscience, Sainsbury Wellcome Centre
Neural Control Theory

Class of 2017 — Imperial College London
Master of Science with Distinction, Department of Mathematics
Controllability of Random Geometric Graphs

Class of 2016 — Magdalene College, University of Cambridge
Master of Philosophy with Distinction, Department of Engineering
Kirigami Sheets: Engineering Objects with Holes

Class of 2015 — Massachusetts Institute of Technology
B.S. Department of Mechanical Engineering
Minor in Comparative Media Studies
GPA: 5.0/5.0

EXPERIENCE

2017-2018 Research Assistant, Sainsbury Wellcome Center *London, UK*

Worked in the Mrsic-Flogel to develop a new experimental setup involving large-scale, close-loop optogenetics. Participated in group meetings and events within the centre.

2015-2016 Supervisor, Gonville & Caius College *Cambridge, UK*

Supervised 18 first-year engineering students in Structural Mechanics in place of a faculty member on sabbatical. Met with two or three students per session where problems were explained alongside examples. Wrote reports each term on each student's progress and provided exam strategy.

2013-2015 Researcher, Center for Bits and Atoms, *MIT*

Designed, prototyped, iterated a novel manufacturing process for composite digital materials. Spearheaded development of an automation workflow for parallel filament winding composite parts by retrofitting a desktop milling machine.

January 2015 Field Engineer, GoGrit *Pithampur, India*

Partnered with an MIT startup and the MIT Public Service Center to prototype a folding off-road wheelchair. Conducted on-site manufacturing consulting.

Summer 2013 Researcher, Otherlab *San Francisco, CA*

Authored a workflow for a bicycle fabrication technology project. Prototyped a method to fuse polyethylene tubing as part of a project to provide nested natural gas tanks for alternative energy automotive applications.

Summer 2012 Intern, WiTricity *Watertown, MA*

Fabricated a 2-axis CNC table for testing wireless power transfer technology. Designed and fabricated a stand to accompany a consumer product.

2011-2012 Researcher, Laboratory for Manufacturing and Productivity, *MIT*

Designed an dynamic impedance test environment for PDMS wafers for microfluidics applications. Fabricated a microfluidic chip embosser. Fabricated a roll-to-roll microprinter for high-speed silicon wafer manufacturing.

PUBLICATIONS

Conference Paper Byron's Entropy: The Chaos of Hard Clay

International Association of Byron Scholars: "Byron, Time and Space". Yerevan, Armenia July 2017. Discussed Byron's connection to early statistical mechanics with poesis as a type of theory generation. Explored the fecundity of collaboration between scientific and poetic thinking embodied by Lord Byron.

Conference Paper Engineering Kirigami Sheets

IASS Conference Tokyo, Japan September 2016. Discusses the theory, design and analysis of kirigami in an engineering setting towards the development of shape-changing surfaces.

Journal Article Macrofabrication with Digital Materials: Robotic Assembly

Architectural Design, September 2015. Explores the implications of the use of digital materials, reversibly assembled from a discrete set of parts with a discrete set of relative positions and orientations, for applications on scales ranging from aerostructures to geoprinting.

Thesis Internal Wave Generation via Finite Cylinder Oscillation

MIT undergraduate thesis. Explored nonlinear internal wave dynamics of a stratified fluid through particle image velocimetry (PIV) for applications to ocean dynamics. Designed and conducted wave-tank experiments and data analysis.

U.S. Patent Ganged Resin Transfer Molding for Filament Wound Parts

Co-invented with Samuel Calisch and Professor Neil Gershenfeld. Claims a technique for high-throughput digital material production. This technology is currently being adapted to allow the manufacture and assembly of large lattices for applications across length scales.

HONORS

Academic 2015 Marshall Scholarship

One of 32 students in the United States selected for two years of study at two UK universities of their choice. In commemoration of the Marshall Plan and the enduring US-UK Special Relationship.

Leadership 2015 Engineering Student Advisory Committee

One of 12 MIT students chosen to represent the mechanical engineering student body in meetings with MIT faculty.

Humanities 2014 Burchard Scholarship

One of 30 MIT students chosen to receive the highest academic honor in the MIT Humanities Department.

PROJECTS & SERVICE

2017-Present SWC Public Engagement

Active member of the Sainsbury Wellcome Centre Public Engagement team. Lead on the development of an SWC podcast. Participant in a range of public events for communicating neuroscience.

2017-Present Mentorship

Remote mentor through the MIT Distinguished Fellowships Office working with students applying for international fellowships. E-mentor through the UK Social Mobility Foundation. Remote advisor for the Colquitt County High School Science Fair Team.

2007 - Present Automotive Restoration

Restored a 1967 Volkswagen Microbus beginning at age 13. This included engine replacement and rebuilding, bodywork and painting, electrical installation, and altered suspension. Project ongoing.

SKILLS

Fabrication 3D printing, waterjet, lasercutting, milling, turning, carpentry, fiber composite layup, MIG and TIG welding

Software Python, SolidWorks, MATLAB, Rhinoceros/Grasshopper, Final Cut Pro, HTML/CSS