

HOLLY M. JACKSON

Academic Curriculum Vitae

✉ holly_jackson@berkeley.edu | www.holly-jackson.com |  Google Scholar

EDUCATION

University of California, Berkeley 2023 – present
PhD Computer Science | Advisor: [Prof. Ben Recht](#)

Columbia University 2022 – 2023
MA Human Rights Studies | Thesis Advisor: [Prof. Mahmood Mamdani](#)

Massachusetts Institute of Technology 2018 – 2022
BS Electrical Engineering and Computer Science | Minor in Applied International Studies

SELECTED PUBLICATIONS

Journal Papers

- J. Dambrogio*, A. Ghassaei*, D. S. Smith**, [H. Jackson**](#), M. L. Demaine, G. Davis, D. Mills, R. Ahrendt, N. Akkerman, D. van der Linden, and E. D. Demaine, “Unlocking history through automated virtual unfolding of sealed documents imaged by X-ray microtomography,” *Nature Communications*, vol. 12, no. 1184, 2021.
- [H. Jackson](#), P. Jofré, K. Yaxley, P. Das, D. de Brito Silva, and R. Foley, “Using heritability of stellar chemistry to reveal the history of the Milky Way,” *Monthly Notices of the Royal Astronomical Society*, vol. 502, no. 1, pp. 32–47, 2021.
- P. Jofré, [H. Jackson](#), and M. Tucci Maia, “Traits for chemical evolution in solar twins,” *Astronomy & Astrophysics*, vol. 633, no. L9, 2020.

Conference Papers

- J. Bhatia, [H. Jackson](#), Y. Tian, J. Xu, and W. Matusik, “Evolution Gym: A Large-Scale Benchmark for Evolving Soft Robots,” in *Advances in Neural Information Processing Systems (NeurIPS)*, M. Ranzato, A. Beygelzimer, Y. Dauphin, P. Liang, and J. W. Vaughan, Eds., vol. 34. Curran Associates, Inc., 2021, pp. 2201–2214.
- [H. M. Jackson](#), “Topological Optimization of a Cuboct Truss Structure Using a Genetic Algorithm,” in *58th AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference (AIAA SciTech)*, 2017.

Published Work in Humanities

- [H. Jackson](#), “The On-Campus Israel Lobby: How the Suppression of Palestinian Activism on US College Campuses Is a Multi-Million Dollar Foreign-Funded Industry,” *Master’s Thesis, Columbia University*, 2023.
- [H. Jackson](#), “The New York Times distorts the Palestinian struggle: A case study of anti-Palestinian bias in US news coverage of the First and Second Palestinian Intifadas,” *Media, War & Conflict*, vol. 17, no. 1, pp. 116–135, 2023.

RESEARCH EXPERIENCE

NASA Ames Research Center, Mountain View, CA March 2024 – present
Intern | Supervisors: [Caleb Adams](#) & [Ignacio Lopez-Francos](#)

- Investigating 3D reconstruction techniques for the identification of volatiles (e.g. ice, water, carbon dioxide) on lunar poles from multispectral image data.
- Contractor through KBR from June 2024 onwards.

MIT History Department, Cambridge, MA February 2022 – August 2022
Undergraduate Researcher | Supervisor: [Prof. Pouya Alimaghani](#)

- Researched media coverage of Syria, Yemen, Ukraine, and Iran in US media using computational methods.

MIT Geometric Data Processing Group, Cambridge, MA June 2021 – December 2021
Undergraduate Researcher | Supervisors: [Prof. Justin Solomon](#) & [Dr. Oded Stein](#)
• Developed a segmentation algorithm for approximate piecewise developable surfaces.

MIT Computational Fabrication Group, Cambridge, MA February 2021 – June 2021
Undergraduate Researcher | Supervisor: [Prof. Wojciech Matusik](#)
• Co-developed a benchmark suite and computational pipeline for soft robotic evolution.

MIT Media Lab, CSAIL, and Libraries, Cambridge, MA July 2016 – March 2021
Research Assistant | Supervisors: [Prof. Erik Demaine](#) (CSAIL) & [Prof. Neil Gershenfeld](#) (CBA)
• Co-developed an algorithm to virtually unfold 3D CT scans of unopened historical documents.

Diego Portales University, Astronomy Nucleus, Santiago, Chile June 2019 – January 2021
Research Assistant | Supervisor: [Prof. Paula Jofré](#)
• Generated phylogenetic trees to map the chemical evolution of stars in the Milky Way based on their elemental makeup.

Adobe Research, San Francisco, CA May 2020 – August 2020
Software Engineering Intern | Supervisor: [Dr. Noam Aigerman](#) (Creative Intelligence Lab)
• Developed adaptive B-splines using deep learning methods.

NASA Ames Research Center, Mountain View, CA June 2015 – August 2017, Summer 2018
Intern | Supervisor: [Dr. Kenny Cheung](#) (Coded Structures Lab)
• Developed genetic algorithms for the automatic generation of programmable 3D truss structures. Created prototypes and performed physical stress testing.
• Developed systems for robotic assembly of truss structures.
• Supported through Stinger Ghaffarian Technologies (SGT).

TALKS

Media bias

Guest lecturer, MIT 21H.262 history course November 2024
Guest lecturer, MIT linguistics seminar November 2024
UC Berkeley Graduate School of Journalism October 2023

A large-scale benchmark for evolving soft robots

NeurIPS Poster Session December 2021

Virtually unfolding sealed locked letters

Utrecht University Medical Imaging Conference June 2021
Rijksmuseum Technical Art History Series May 2021
MIT Digital Humanities Speaker Series April 2021
Private Conference at the Museum voor Communicatie June 2018
MIT MacVicar Day March 2017

Building an evolutionary tree of the Galaxy

Max Planck Institute of Astronomy November 2020

Genetic algorithms for programmable 3D truss structures

AIAA SciTech Forum January 2017

SELECTED AWARDS

2022 MIT EECS Undergraduate Teaching Award for Teaching Excellence
2020 Adobe Research \$10,000 Women-in-Technology Scholarship Recipient
2015 White House Science Fair Exhibitor

2014 Broadcom MASTERS National Science Fair \$25,000 Grand Prize

TEACHING

Graduate student TA and grader	
Columbia CSOR 4231, Analysis of Algorithms I	Fall 2022
Undergraduate TA and recitation instructor	
MIT 6.006, Introduction to Algorithms	Spring 2022
MIT 6.006, Introduction to Algorithms	Fall 2021
Guest instructor	
MIT Book and Letter Making Lab	January 2022

REVIEWING

Journal Reviewing: Media, War & Conflict (2023)
Conference Reviewing: IEEE-RAS International Conference on Soft Robotics (RoboSoft) (2023)

SELECTED PRESS

A large-scale benchmark for evolving soft robots	
Scientific American, IEEE Spectrum, WIRED, MIT News	December 2021
Virtually unfolding sealed locked letters	
Scientific American	April 2021
The New York Times, WIRED, NPR, Wall Street Journal, MIT News, CNN,	March 2021
The Economist, The Guardian, New Scientist	
Building an evolutionary tree of the Galaxy	
MIT News	December 2020
Genetic algorithms for programmable 3D truss structures	
IEEE Women in Engineering Magazine	June 2018
NASA Ames TechBytes Newsletter	Winter 2017

SKILLS

Programming	Python, MATLAB, Javascript/Typescript, Java, C, C++, R, Julia
Software	CUDA, Pytorch, Node.js, Git, CAD (SolidWorks, Fusion 360), HTML
Hardware	Embedded Micro-Control (Arduino, PSoC), Verilog, Assembly
Domain Knowledge	Algorithms/data structures, graphics, vision, evolutionary algorithms, physics-based simulation, numerical modeling