

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: *The On-Campus Israel Lobby: How the Suppression of Palestinian Activism on US College Campuses Is a Multi-Million Dollar Foreign-Funded Industry*, advised by [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.
- [Humanities] [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.

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.

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 bias against Syria, Yemen, and Iran in American 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 linguistics seminar (planned) 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, GPU programming