

HOLLY M. JACKSON

Academic Curriculum Vitae

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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

Graduate Student Researcher, Berkeley, CA

August 2023 – present

NASA Ames Research Center, Mountain View, CA

March 2024 – present

Intern | Supervisors: [Caleb Adams](#) & [Ignacio Lopez-Francos](#)

- Investigating multispectral 3D reconstruction techniques for the analysis of regolith (soil) on lunar poles with applications for identification of volatiles (e.g. ice, water, carbon dioxide).
- 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 in US coverage of Palestine and Israel

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| 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

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| NeurIPS Poster Session | December 2021 |
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Virtually unfolding sealed locked letters

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| Guest instructor, MIT Book and Letter Making Lab | January 2022 |
| 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

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| Max Planck Institute of Astronomy | November 2020 |
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Genetic algorithms for programmable 3D truss structures

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| AIAA SciTech Forum | January 2017 |
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SELECTED AWARDS

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| 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: Third World Quarterly (2025), 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