

HOLLY JACKSON

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Pursuing B.S. in Electrical Engineering and Computer Science

Relevant Coursework: Computation Structures, Circuits and Electronics, Numerical Modeling and Simulation (G), Differential Equations, Introduction to Python, Fundamentals of Programming, Math for Computer Science, Elements of Software Construction, Microcomputer Project Laboratory

Expected May 2022 | Cambridge, MA

SKILLS

PROGRAMMING

Over 100,000 lines:

Javascript

Over 10,000 lines:

R • Python • Java • MATLAB • \LaTeX

Over 1000 lines:

Verilog • Bluespec • Julia • C • Assembly

SOFTWARE EXPERTISE

Word • Excel • PowerPoint • Visio • Solidworks Fusion 360 • Rhino • Antimony (CAD) frame3dd (FEA) • UP (3D printing) • MeshLab GIMP • Adobe Creative Cloud

HARDWARE EXPERTISE

3D Printers • Laser Cutters • CNC Mills
Vinyl Cutters • Load Testing Systems (Instron)

MAJOR AWARDS

- 2019 Adobe Research Women-in-Technology Scholarship Recipient
- 2017 2nd place award in Robotics and Intelligent Systems, Intel International Science and Engineering Fair
- 2015 White House Science Fair Invitee and Exhibitor
- 2014 \$25,000 Samueli Foundation Grand Prize, Broadcom MASTERS National Science Fair

PRESENTATIONS

- 2018 Private Conference at the Museum voor Communicatie (The Hague, Netherlands) – presented research on virtually unfolding 3D CT scan data of 17th century locked letters on a full-paid trip.
- 2017 MIT MacVicar Day (Cambridge, MA) – presented my research as guest of Dr. Neil Gershenfeld (MIT, CBA).
- 2017 AIAA SciTech (Grapevine, TX) – presented my research on genetic algorithms for programmable 3D trusses conducted at NASA Ames.

RESEARCH AND WORK EXPERIENCE

ADOBE RESEARCH | PAID INTERN

May 2020 – Aug 2020 | San Francisco, CA

- Intern at the Creative Intelligence Lab under Dr. Noam Aigerman.
- Defining and computing an implicit function whose zero iso-contours are Bezier curves.

UNIVERSIDAD DIEGO PORTALES, ASTROPHYSICS DEPARTMENT | INTERN

June 2019 – present | Santiago, Chile

- Developing pipelines (using python and R) to generate phylogenetic trees to map the chemical evolution of stars in the galaxy based on their elemental makeup.
- Collaborating with Time's 100 NEXT and Science News's Top 10 Scientists to Watch Dr. Paula Jofré (UDP - Universidad Diego Portales), Keaghan Yaxley (University of Cambridge), and Dr. Robert Foley (University of Cambridge).

MIT MEDIA LAB, CSAIL, AND LIBRARIES | PAID INTERN

July 2016 – present | Cambridge, MA

- Developing an algorithm (using Javascript, Java, MATLAB, and Python) to virtually unfold 3D CT scans of unopened historical documents.
- Collaborating with Amanda Ghassaei (Adobe Research), Jana Dambrogio (MIT Libraries), Dr. Erik Demaine (CSAIL - Computer Science and Artificial Intelligence Lab), Dr. Neil Gershenfeld (CBA - Center for Bits and Atoms), and Martin Demaine (CSAIL).

NASA AMES RESEARCH CENTER | PAID INTERN

July 2018 – Aug 2018 | Mountain View, CA

- Intern (through SGT - Stinger Ghaffarian Technologies) at Coded Structures Lab under Dr. Kenneth Cheung.
- Developed systems for robotic assembly of truss structures.

NASA AMES RESEARCH CENTER | INTERN

June 2015 – Aug 2017 | Mountain View, CA

- Intern at Coded Structures Lab under Dr. Kenneth Cheung.
- Developed genetic algorithms (using Java) for the automatic generation of programmable 3D truss structures.
- Created prototypes and performed physical stress testing.

PUBLICATIONS

- 2020 Journal paper in progress | H. Jackson, P. Jofré, K. Yaxley, P. Das, M. Tucci Maia, R. Foley. "Reconstructing the shared history of Milky Way disk stars using phylogenetic methods."
- 2020 Journal paper in progress | J. Dambrogio, A. Ghassaei, D. Smith, H. Jackson, M. Demaine, G. Davis, D. Mills, R. Ahrendt, N. Akkerman, D. van der Linden, E. Demaine, "Unlocking History: Virtual Unfolding of Sealed Documents to Reveal Text and Letterlocking."
- 2020 P. Jofré, H. Jackson, M. Tucci Maia, "Traits for chemical evolution in solar twins: Trends of neutron-capture elements with stellar age," *Astronomy & Astrophysics*.
- 2017 H. Jackson, "Topological Optimization of a Cuboct Truss Structure Using a Genetic Algorithm," *58th AIAA/ASCE/AHS/ASC Structures, Structural, Dynamics and Materials Conference, AIAA SciTech Forum and Exposition*. Paper published in the conference proceedings.