

ALEXANDER HARRISON GREER

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EDUCATION

Massachusetts Institute of Technology (MIT)

Cambridge, MA

Candidate for master of Engineering in Computational Biology | GPA: 5.0/5.0

Expected January 2027

Bachelor of Science in Computer Science & Molecular Biology | GPA: 5.0/5.0

June 2025

• Master's Thesis: "A General Method of Cellular Metabolic Network Model Construction"

• Relevant Coursework: Cell Biology; Machine Learning; Science, Technology, & Public Policy; Computational Biology; Discrete Mathematics; Economic Analysis; Biochemistry & Thermodynamics; Bioengineering Laboratory; Differential Equations; Physics (Classical, E&M); Chinese Conversation & Culture; Design & Analysis of Algorithms; Systems Biology

RESEARCH AND EXPERIENCE

dSideAI

Cambridge, MA

Software Development Manager

Summer 2025

- Led team of three software engineers to develop "virtual CIO" AI financial platform reducing portfolio construction time by 10-fold.
- Collaborated with active wealth managers to effectively leverage market data sources for comprehensive financial recommendation.
- Presented product demos to executives from major institutions like Bank of America and Rockefeller Capital.

Palvella Therapeutics

Wayne, PA

Researcher and Data Analyst

Summer 2024

- Developed software identifying orphan disease R&D targets using machine learning, saving weeks of R&D initiation time.
- Created technical presentations for investors and regulatory filings; organized research database to streamline product pipeline.
- Co-authored treatment efficacy review article on novel drug-disease therapy combination with significant clinical improvement.

Department of Biology; MIT

Cambridge, MA

Teaching Assistant: Biochemistry

Spring 2023

- Advised and tutored students, graded papers, conducted office hours and exam reviews, assisted professor in course delivery.

Experimental Study Group; MIT

Cambridge, MA

Teaching Assistant: Single Variable and Multivariable Calculus

2021-2023

- Tutored first-year students, graded problem sets and exams, conducted office hours and exam reviews
- Assisted professor in course logistics and material preparation. Compensated, selective position. Four semesters.

Centre for Process Innovation

Sedgefield, UK

Software Developer and Data Analyst

Summer 2022

- Developed software to integrate laboratory equipment for enhanced research and data analysis, streamlining experiments and increasing R&D process efficacy. Featured in company website video.
- Used software to inform addition of value for small- and medium-sized chemical research enterprises.

Sustainable Design Lab; MIT

Cambridge, MA

Software Developer

Summer 2021

- Developed data analysis tools and graphics for city planner decision-making to reduce carbon emissions causing climate change.

Department of Bioengineering Biomakerspace; MIT

Cambridge, MA

Writer, Producer, Filmmaker

Spring 2021

- Researched, wrote, narrated, and led production team for animated K-12 educational video on plastic degradation and recycling.

Department of Art, Film and Visual Studies; Harvard

Cambridge, MA

Writer, Producer, Filmmaker

Fall 2024

- Developed films on personal experiences with disease and disruptive technology.

Tangible Media Group; MIT Media Lab

Cambridge, MA

Software Developer and Designer

Winter 2021

- Developed web app for digital knit-pattern generation with graphical user guide to teach creative usage in elementary schools.

Therapeutic Technology Development & Design Lab; MIT

Cambridge, MA

Software/Hardware Designer

2019-2020

- Designed graphics as cited contributor for peer-reviewed paper on artificial heart.
- Designed animal testing platform for wound healing to reduce risks in childbirth.
- Developed user interface and control board testing equipment for therapeutic soft robots.

Haverford Materials Group

Haverford, PA

Co-Founder and Leader

2018-2020

- First author, two peer-reviewed research papers on soft robot design and material science education.
- Invited presenter, NASA-Langley engineering design session, soft robotics/lunar exploration.
- 1st place, international Soft Robotics Toolkit competition at Harvard University.
- Developed digital robotics teaching platform for high schools.

LEADERSHIP

MIT THINK Scholars Program

Director

*Cambridge, MA
Fall 2020-2023*

- Led MIT student team to judge, mentor finalists of annual national high school STEM research competition.
- Developed brand identity, marketing to attract wider range of program applicants.
- Designed web interface for applications, judging, and finalist selection.

MAKE Community Makerspace; MIT

Senior Mentor

*Cambridge, MA
2021-present*

- Train MIT students in fabrication methods to turn designs into physical products: 3D printing, laser cutting, manual fabrication.

VEX Robotics

Team Captain and Design Lead

*Haverford, PA
2014-2018*

- Division Champion among six world finalists at 2018 VEX World Championship (10,000 teams from more than 40 countries).
- Led design and construction of multiple robots; mentored incoming team members on design practices and programming.

PUBLICATIONS

Alexander H. Greer et al., "Sirolimus for Venous Malformations: A Systematic Review of Efficacy and Safety", in preparation.

Alexander H. Greer, Edward King, Elijah H. Lee, Aditya N. Sardesai, Yiheng Chen, Safa E. Obuz, Yan Graf et al. "Soluble polymer pneumatic networks and a single-pour system for improved accessibility and durability of soft robotic actuators." *Soft Robotics* 8, no. 2 (2021): 144-151.

Alexander H. Greer, William Vauclain, Elijah H. Lee, Aidan Lowe, Jared Hoefner, Nikhil Chakraborty, Michael Fairorth et al. "Design of a guided inquiry classroom activity to investigate effects of chemistry on physical properties of elastomers." *Journal of Chemical Education* 98, no. 3 (2021): 915-923.

Park, Clara, Yiling Fan, Gregor Hager, Hyunwoo Yuk, Manisha Singh, Allison Rojas, Aamir Hameed et al. "An organosynthetic dynamic heart model with enhanced biomimicry guided by cardiac diffusion tensor imaging." *Science Robotics* 5, no. 38 (2020): eaay9106. (*Acknowledged contributor*).

SKILLS & INTERESTS

Overall Interest: Developing methods to effectively promote understanding of fact-based science and technical advances to both the general public and decision makers as a way to improve the human condition.

Programming Skills: Data analysis / machine learning in Python [NumPy, pandas, PyTorch]; web development in JavaScript [React]

Design Skills: Fusion360, SolidWorks, Rhino7, Illustrator, InDesign

Foreign Languages: 5 years Chinese (summer study in China); 3 years Latin

Other Skills: Piano (5 solo recitals, Carnegie Hall; 16 years of study), pipe organ; second-degree black belt in Tang Soo Do karate

Honors & Awards: National Merit Scholarship Winner; Cum Laude Society; Yale Book Award; *The Haverford School's* top awards in math, science, English, Chinese, music technology.