

Samuel A. Solomon

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EDUCATION

California Institute of Technology (Pasadena, CA)

June 2025

- Candidate for a Doctor of Engineering in Medical Engineering with a focus on Machine Learning
- GPA: 4.1 (on a 4.0 Scale); *National Science Foundation Research Fellow*; *Hertz Fellowship Finalist*

Massachusetts Institute of Technology (Cambridge, MA)

June 2020

- Bachelor of Science in Chemistry-Biology and Physics; Minor in Nuclear Engineering and Computer Science
- *Certificate in Living Machines*; *Undergraduate Teaching Award in Mathematics*; *Department of Chemistry Research Award*
- GPA: 4.9 (on a 5.0 Scale); *Phi Beta Kappa Scholar*

WORK EXPERIENCE

Gao Lab: Human-Computer Interaction Researcher Assistant (Pasadena, CA)

September 2020 – Present

- Monitoring a user's stress through physical sensors [EOG, PPG, GSR] for optimal stress reduction through virtual simulations.
- Developing a wearable sweat sensor [cortisol, dopamine, noradrenaline] to assess the mental health of astronauts in space.
- Writing a machine learning algorithm that analyzes multimodal data [PPG, lactate, glucose, uric acid] to predict a user's stress

Amazon: Software Engineer Intern (Remote)

June 2022 – September 2022

- Designed and developed a survey editor website to provide real-time modifications to the Amazon Style survey questions.
- Modified the backend pricing information as list or was price on the Amazon Style website, fixing a legal requirement.
- Redesigned the product info card front-end for customers to easily recognize savings.

Google: Software Engineer Intern (Remote)

January 2022 – April 2022

- Wrote a public API that allows developers to simulate different device configurations on new foldable phones.
- Found and solved a bug in the Android platform that prevented users from accessing folding features due to a race condition.

NASA Jet Propulsion Laboratory: Computational Genetics Research Assistant (Pasadena, CA)

May 2020 – December 2020

- Compared gene-wise mutations in *Klebsiella* during spaceflight using the whole genome sequence in python.
- Computationally modeled the contamination routes of bacteria (*Bacillus*, *Klebsiella*) onboard the ISS for planetary protection.
- Published in the American Society for Microbiology journal for a computational genetics' analysis of ISS exposed *Klebsiella*.

Hen Lab: MIT Computational Nuclear Physics Researcher (Cambridge, MA)

February 2019 – May 2020

- Simulated C++ quasielastic scattering events to probe for signatures of a previously unobserved 30 MeV force-carrying boson.
- Awarded \$500 to present at the American Physical Society's Department of Nuclear Physics' CEU conference in October 2019.

NASA Ames Research Center: Summer Research Assistant (Mountain View, CA)

June 2019 – August 2019

- Chemically modified gold nanoparticles to kill off bacteria when hit by cosmic radiation to sterilize water in cislunar space.
- Created 3D models of novel cell organoids in SolidWorks which were exposed to radiation at Brookhaven National Laboratory.

New Engineering Education Transformation: MIT Biomedical Researcher (Cambridge, MA)

September 2017 – May 2019

- Simulated and built a quad-cultured gut on a chip of the human intestine to replace unreliable/unethical animal models.
- Evaluated villi-like structure formation + MUC2 expression. Quantified diffusion of lucifer yellow through membrane channels

LEADERSHIP AND CLUBS

Leadership Positions:

- US ambassador for an international entrepreneurship competition (Incube) in Switzerland
- Entrepreneurship and Software (HTML, CSS, JavaScript) High School Teacher in Israel

July – October (2019, 2021)

July 2021 – August 2021

Entrepreneurial Ventures:

- Founder of Turtle Pond – Caltech Course Selector (<https://turtle-pond.com/>)
- Co-Founder of Vibrant Life – connecting the special needs community in the 21st century
 - MIT 100K Pitch Finalist (November 2019); Awarded \$5,000 from MIT Sandbox
- Founder of the online tutoring center Mind Network (<https://mindnetwork.us/>)
 - Awarded \$1000 in MIT Sandbox + \$1000 as 1st place finisher in BetterMIT hackathon
- Co-Founder of Augmedic for the International start-up competition Incube (2nd place finisher)

August 2020 – Present

September 2019 – Present

December 2018 – Present

September 2018 – October 2019

SKILLS

Software	Python, Kotlin, Java, Javascript, CSS, HTML, C++, GitHub, SolidWorks, AutoCAD, Matlab, IntelliJ, and Android Studio
Practical	Machine Learning, Wearable Devices/Sensors, Full Stack Development, CAD Modeling, and Entrepreneurship