

Benjamin Goldstein

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EDUCATION

Georgia Institute of Technology College of Engineering

Bachelor of Science in Electrical Engineering, GPA: 4.0

Atlanta, GA

May 2029

Agoura High School (AHS)

Valedictorian, GPA: 4.4

Agoura Hills, CA

June 2025

Relevant Coursework

Digital System Design, Intro OOP, Stats, Honors Linear Algebra, Calculus I/II, Physics (Mech+E&M)

SKILLS

Hardware: Arduino, Raspberry Pi, Stepper/DC/Servo Motor Control, Various Sensors, Soldering, Multimeter, Oscilloscope

Software: Python, C++, Java, Arduino IDE, VS Code, Linux, Onshape CAD, KiCAD

Libraries: Numpy, Matplotlib

Concepts: Embedded Systems, Motor Control (Step, PID), Sensing Circuitry, Heuristic Search, ML Classifiers

PROJECT EXPERIENCE

Autonomous Rubik's Cube-Solving Robot

Agoura Hills, CA

Independent Project

Aug 2024 - Aug 2025

- Designed, fabricated, and integrated all mechanical, electronic, and software systems achieving **<1 min** autonomous solves
- Drove NEMA stepper motors with hall sensor feedback to ensure fast, accurate, and repeatable cube turning
- Built statistical color recognition algorithm using chi-square tests to reliably map cube faces under varied lighting conditions
- Implemented heuristic-driven depth-first search algorithm in Python on Raspberry Pi finding **≤35 move** solutions

Selected Hardware and Software Projects

Agoura Hills, CA

Independent Projects

Aug 2023 - Aug 2025

- Built a 9W spark-gap Tesla coil using flyback transformer circuitry, custom capacitor bank, generating **1-1.5 cm** plasma arcs
- Trained CNN skin lesion classifier on NVIDIA Jetson Nano, detecting malignant lesions with **~90% accuracy**
- Developed ML mini-projects including linear regression fuel efficiency model, logistic heart disease predictor, and neural network Flappy Bird player

CURRENT ENDEAVORS

Medical Robotics Club

Atlanta, GA

Limbo Electrical Control Team Member

Sept 2025 - Present

- Designing PID control system driving fingers, thumb, and wrist actuation in a multi-DOF robotic prosthetic hand

Autonomous Connect 4 Robot

Atlanta, GA

Independent Project

Sept 2025 - Present

- Developed custom IR detection circuitry with comparator-based thresholding for reliable piece sensing
- Implemented PID-controlled piece placement and optimized bitboard game representation with finite-state control logic

ADDITIONAL EXPERIENCE

AHS Peer Tutoring

Agoura Hills, CA

Volunteer Peer Tutor

Aug 2023 - June 2024

- Tutored fellow AHS students in Math (Algebra I → Calculus II), Physics, and Chemistry
- Contributed **30+** volunteer hours before school assisting peers with conceptual understanding, homework, assignment management, and test prep

HONORS AND AWARDS

AHS Outstanding Achievement in Science (1 of 4) • AHS Excellence in Computer Science • AP Scholar with Distinction (2x)