

Ethan Sanchez

Philadelphia, Pennsylvania

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EDUCATION

University of Pennsylvania

M.S. in Robotics

University of Colorado Boulder

B.S. in Mechanical Engineering, Minor in Computer Science

GPA: TBD/4.00

(Expected May 2026)

GPA: 3.85/4.00

May 2024

ENGINEERING EXPERIENCE

Undergraduate Research Assistant, Boulder, CO

May. 2022 - Present

- Developing a magnet-based system for creating board games that can be played remotely
- Assisting PhD student by designing and prototyping a mount to connect components to Toio robots
- Designed and built a Scotch Yoke mechanism for a robot to raise and lower a magnet in order to grab and move game pieces

Internship; Zone 4 Systems Integration and Design, Fayetteville, AR

May 2023 - Aug 2023

- Tracked daily build progress and work hours using Procore construction management software
- Completed quality control inspections of Walmart's Alphabot pickup order fulfillment system
- Ensured required inventory was onsite to avoid build stops

Internship; Exyn Technologies, Philadelphia, PA

May 2016 - May 2020

- Modeled drone sensor mounts, electronic enclosures, and flight simulation environments using SolidWorks and Fusion 360 CAD software
- Prototyped and iterated designs using MakerBot Replicator 2 and Formlabs Form 2 3d printers
- Wired and programmed Teensy and PSoC microcontrollers using I2C and SPI communication protocols
- Programmed an application for an Oculus Rift S headset in C# using Unity

INDEPENDENT LEARNING

Self-directed video game development

Jan. 2018 - May 2022

- Created and animated a skeletal mesh of a transformer to be used in Unreal Engine.
- Implemented movement, projectile, and other game logic using Unreal Engine blueprint scripting

Rhetoric Club; Mount Sophia Academy, Newark, DE

Sept. 2017 - May 2020

- Learned techniques to improve public speaking; Competed in ACSI Public Speaking competitions

PROJECTS

Electromechanical Engineer, Senior Capstone Project, Boulder, CO

Aug. 2023 - May. 2024

- Designed and developed an adaptive fishing device aimed at assisting individuals with spinal cord injuries
- Engineered the electromechanical system incorporating a stepper motor, DC motor, solenoid, and back EMF protections
- Programmed Teensy microcontroller using Arduino to enable user control over casting distance and reeling speed via joystick and button interface
- Created a custom PCB to compactly house electrical components, ensuring durability and functionality in a waterproof design
- Achieved casting distances up to 35 feet

Component Design, Boulder, CO

Jan. 2023 - May. 2023

- Gained experience using saws and mills while designing and manufacturing a tricycle, powered by a hand drill, that carried 875 lbs uphill
- Used precision boring head to get a hole with a tolerance of 6 thou in order to press fit a bearing

SKILLS: SolidWorks, Fusion 360, object-oriented programming, C++, MATLAB, Resilience, Communication

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(Not actually part of resume yet)

PROJECTS

First year engineering projects, Boulder, CO

Aug. 2021 - Dec. 2021

- Designed and built a doggy door locking mechanism that incorporated a rack and pinion deadbolt that is activated when a moisture sensor detects it is raining

HOBBIES

Golf Instructor, Chester County, PA

May 2017 - July 2020

- Worked as a golf instructor at two different golf courses, teaching basic skills to students
- Took small groups of students out on the golf course to practice

Freelance Drone Photography, Chester County, PA

November 2016

- Filmed and edited aerial flyovers of all 18 holes at Moccasin Run Golf Club for their website

Skateboarding

May 2015 - Present

- Learned resilience through falling often in order to reach my objective
- Competed and podiumed in freestyle longboard competitions along the east coast

Other

Certified SOLIDWORKS Associate (CSWA)

Relevant Coursework: Intro to Programming, Data Structures, Statics, Solids, Dynamics, Thermodynamics, Fluid Dynamics, Component Design, Circuits and Electronics

Mention fluids CFD project