

Benjamin Caleb Abt

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Technical Projects

Penn Electric Racing

Fall 2019 to Present

- Use SolidWorks to perform Finite Element Analysis on car components, design and construct a model cockpit, design and analyze braking system, and secure elements to be welded in precise locations on the chassis.
- Driver Interfaces subsystem lead

Smoke House

Summer 2020

- Used SolidWorks to design a meat smokehouse, then constructed using a variety of building materials.

Precision Machined Heat Engine

Fall 2021

- Used SolidWorks and Mastercam to build a working heat engine via milling and turning.

Horse Name Plates

Fall 2021

- Used SolidWorks and Mastercam to design and mill name plates for horse stables.

Java Game

Spring 2019

- Re-created the popular internet game '2048'.

Emergency Vehicle Light Installation

Winter 2019

- Learned wiring, fusing, soldering, and using relays by outfitting vehicles with emergency lights and sirens.

Diesel Motorcycle

Summer 2019 to Present

- Building a motorcycle that runs on biofuels produced from a local pond.

Building Projects

Summer 2020

- Other handiwork/building projects include: irrigated raised bed garden, pig feeder, squat rack / bench, rewiring trailers, constructing french drains.
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Leadership and Community Experience

Technology Student Association

2012 - 2019

- Elected National TSA Reporter, spoke in front of thousands of people, met with appointed members in the Department of Education to discuss the future of STEM education, chaired a committee composed of members across the country, and led leadership training.

Volunteer Firefighter

2018 - Present

- Participate in fire and emergency response in order to protect life and property, gaining lifesaving training.

University of Pennsylvania Water Polo

Fall 2019 - Present

- Participate in fire and emergency response in order to protect life and property, gaining lifesaving training
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Skills

- Technical Skills: SolidWorks, Java, Mastercam, OCaml, Photoshop, Premier
 - Mechanical Skills: Soldering, Computer Construction, Basic MIG / TIG Welding, Precision Machining
 - Soft Skills: Public Speaking, Problem Solving, Ability to Listen and Lead, Motivated, Dedicated
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Employment

Shinkei Systems

Summer 2021

- Lead R&D building robotics to multiply shelf-life of wild caught fish.
- Required Tasks / Skills: SolidWorks, FEA, Static Analysis, Tolerance Stackup, Custom Hydraulic Connections, CNC Milling, 3D Printing, Outsourcing Machined Components, Purchasing with Budget Constraints

- **Landscaper** (Summer 2019); **Christmas Tree Salesperson** (Winter 2018, 2019); **Benny's Diner** (Winter 2019); **Arrowhead Day Camp** (Summer 2016)
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Education

Bachelor of Science in Mechanical Engineering: University of Pennsylvania

Expected May 2023

GPA 3.55/4

Philadelphia, PA

General Education Development, International Baccalaureate: Harriton High School

May, 2019

GPA 3.87/4

Villanova, PA

Honors and Awards/Certifications

- Wharton Startup Internship Award (2021); National Honor Society (2019); National Merit Scholarship Commended Student (2019); National Technology Student Association (TSA); Firefighter Type 1 (188 hrs); Honor Roll (2015 - 2019);