

Donovan Burke

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Solution-driven mechanical engineering student skilled in rapid design and fabrication. Collaborative, goal-oriented, with a “get-it-done” mentality. Ready to learn more about the future of aerospace, automotive, and robotic engineering in fast-paced industry setting.

EDUCATION

University of Pennsylvania | Philadelphia, PA

Aug 2025 – May 2028

Bachelor of Science and Engineering in Mechanical Engineering and Applied Mechanics

GPA: 3.86/4.00

EXPERIENCE

Electric Era Technologies | Seattle, Washington | *Engineering Intern*

May 2026 – Aug 2026

- Designed and developed mechanical components to support the rapid deployment of Electric Era's fast-charging stations.
- Sourced and qualified suppliers for mechanical components, managing the process from design through prototype production.
- Collaborated cross-functionally with an engineering team of former SpaceX engineers to advance EV charging infrastructure.

Project Wavefront | Philadelphia, Pennsylvania | *Propulsion Engineer*

Feb 2026 - Present

- Design the cooling system for Mark I, the first undergraduate-built long-duration rotating detonation rocket engine.
- Produce parametric CAD models in Creo Parametric for the cooling jacket, designed for additive manufacturing in steel.
- Review design choices against RDRE-specific cooling literature and incorporating feedback from industry mentors.

Penn Jet Propulsion | University of Pennsylvania, PA | *R&D Team – R&D Lead, Design Lead*

Sept 2025 - Present

- Collaborate with student and professional engineers to design and develop an afterburner system for a micro-turbojet engine.
- Lead the design of the afterburner chamber and integrated flameholder, delegating subsystem work across the team.
- Research materials selection for high-temperature, high-stress conditions in supersonic exhaust environments.

ArmAssist | Conroe, TX | *Founder, Engineering Team Lead*

Aug 2022 – Dec 2025

- Led a team in developing a lightweight, concealable active arm orthotic for muscular dystrophy and atrophy patients.
- Orthotic produced 5x the force of industry leader while projected to be 5x cheaper and 10x lighter, as indicated by early testing.
- Presented at the Regeneron International Science and Engineering Fair (ISEF), winning 4th place in Statics and Dynamics.

Material Robotics Lab | Boston University, MA | *Student Researcher, RISE Program*

July 2024 – Aug 2024

- Designed and manufactured continuum bodies for a millimeter-scale bronchoscope under the guidance of Dr. Sheila Russo.
- Bronchoscope successful in ex-vivo testing, largely a result of continuum bodies facilitating 1 additional degree of freedom.
- Findings presented at the Boston University Summer Symposium to panels of professors and PhD students.

The Mu Lab | University of Iowa, IA | *Student Researcher, SSTP Program*

June 2023 – July 2023

- Designed fibroin-based, 3D printed therapeutic patches to mimic anisotropic deformation under the guidance of Dr. Xuan Mu.
- Created over 60 finalized patches with a Poisson's ratio of 0.84, indicating significant progress in a multi-year project.
- Findings presented at the University of Iowa Summer Symposium to panels of professors and PhD students.

OTHER ACTIVITIES

Yale Alumni Service Corp, Global Volunteers | International | *Team Lead & Volunteer Service Member*

Mar 2022 – Present

- Led sub-teams of volunteers in impoverished or damaged communities in Argentina, Southern Texas, Puerto Rico, and Peru.
- Contributed over 200 hours of service, assisted over 500 individuals, and contributed to over 8 projects across 4 years.

Tracey Casey-Arnold Consulting LLC | Austin, TX | *Consulting Intern*

June 2025 – Aug 2026

- Advised 6 SMBs on integrating AI into operations, marketing, and client-facing processes, saving 10 hours weekly per client
- Rebuilt the intern and onboarding process, cutting review time by 40% and growing the applicant pool by 30% for Fall 2026.

Wharton Undergraduate Entrepreneurship Club | *Venture Capital Committee, Incubator Committee*

Sept 2025 – Present

- Engaged in case studies and workshops that simulate venture decision-making, including startup diligence and market analysis.
- Developed foundational skills in pitch evaluation, industry research, and leadership in a technical start-up environment.

Penn Club Tennis | Club Player

Sept 2025 – Present

Penn Access Engineering

Jan 2026 – Present

SKILLS/INTERESTS

- **Software:** CAD (OnShape, SolidWorks, Fusion360, Creo), Microsoft Office, Ansys, Robot Operating System 2, Python.
- **Other Skills:** AI proficient, basic fabrication/manufacturing techniques, GD&T, great team player, learns from mistakes.
- **Interests:** Jet engines, motorsport, love to play tennis and pickleball, Houston Texans and Rockets fan, aspiring golfer.