

Gavin J. Rauh

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Education

University of Pennsylvania – Philadelphia, PA

GPA: 4.0 2027

Bachelor of Science in Engineering Degree in Mechanical Engineering & Applied Mechanics & Entrepreneurship

Orchard Park High School – Orchard Park, NY

GPA: 97.4%

Experiences

Buffalo Mini Golf LLC: Owner – Buffalo, NY

2025 – Present

- Owner and founder of a full-scale outdoor mini golf facility in Buffalo, NY, with seasonal projections exceeding 40,000 annual customers and over \$415,000 in yearly revenue.
- Overseeing every stage of development—from land acquisition and course design to construction, licensing, staffing, and daily operations.

Summer Build: Off-Road Dune Buggy – Buffalo, NY

2025

- Designed and fabricated a high-performance off-road dune buggy. Optimized steel frame geometry and suspension systems using FEA.
- Fabricated chassis with MIG welding and CNC machining for precision. Utilized a racing-grade engine and drivetrain components to achieve superior performance characteristics.

Rauh Aerial Photography: LLC Owner, FAA Part 107 Certified Pilot, Professional, Published Photographer

2017 – Present

- Developed and implemented a business plan to make profit through piloting unmanned aerial vehicles (UAVs).
- Learned business responsibilities, marketing, social media promotion, communication, and financial strategies. Devised strategic long term investment plan to prioritize consistent business growth.
- Featured twice on the front cover of the OP PULSE Literary and Art magazine; 300+ annual subscriptions.

US Army Engineering Research - AEOP

2025

- Conducted high-intensity mechanical shockwave testing on metamaterial structures, supporting development of advanced alloy structures for defense applications.
- Studied frequency response of shape metal alloy (Nitinol) using COMSOL to develop a metamaterial structure with a tunable band gap.

Case Western Drone Design Team – CWRU VTOL: Pilot, Executive Leadership Position

2024 – 2025

- National Champions: Vertical Flight Society – 1st place overall & top score flyoff performance
- Performed manual and autonomous flights, optimized/strategized flight paths in competitive racing and payload release missions.
- Sponsored by Bell to present at the Vertical Flight Society's Forum 81 Conference in Virginia Beach. Showcase team hexacopter as well as technical and economic analyses alongside research from organizations such as Boeing, Sikorsky, GE Aerospace.

OP Enterprises: LLC President, Majority Shareholder – Buffalo, NY

2023 – 2024

- Held 46% Equity; solicited local investors to contribute several thousand dollars of capital. Designed and produced several branded products; marketed to the WNY region; liquidated & distributed ~220% increase in company value to shareholders.

Prime Minister Plastics: 3D Fabrication and Injection Molding Intern – Orchard Park, NY

2023 – 2024

- Aided injection molding and 3D fabrication company in production management and inventory processing.
- Maintained inventory for current customers such as NASA, Kan-Jam, and MOOG Aerospace.
- Managed key aspects of production and machinery valued well over \$10 million.

AT&T Hand-in-Hand Summer STEM Program: Assistant Program Leader and 3D Printing Lead – Buffalo, NY

2021 – 2023

- Educated 40+ students in grades 7-12 from underrepresented communities basic 3D printing, CAD design, and digital literacy skills.
- Utilized SolidWorks to 3D print specialized prosthetic arms for young children in need.

Dedicated James Webb Space Telescope Researcher

2023

- Devised innovative algorithm to process open-source JWST data and methodically apply hues; published research: 5,000+ views
- Communicated findings and algorithm overview to 40+ members of the New York State Master Teachers Association alongside renowned astrophysicists representing National and International Space Agencies.

Created and Programmed 3D Printed Robotic Bartender

March 2020

- Constructed and programmed an Arduino-based robot to mix and dispense fun drinks.

Conducted public demonstration to 500+ students, school faculty, and local government officials.

Certifications / Skills

- US FAA Part 107 Remote Pilot's License, Drone Building; CAD/3D Printing: Certified SOLIDWORKS Associate Autodesk Inventor Professional, Finite Element Analysis (FEA), Slicers, Software/Programming – MATLAB, Python, COMSOL, Siril Astrophotography, ArduPilot, Mission Planner, Betaflight, C++, Arduino, Raspberry Pi, VSCode, Computer Vision, Microsoft (Excel, Word, PowerPoint), Google (Drive, Mail, Docs, Slides, Sheets), Social Media Management Microcontrollers and Circuitry, Manufacturing, Soldering, Wood Working, Precision Machining, CNC, Analog and Digital Circuits, Control Systems, Logic, and Programming. Heavy Experience with Li-Po, Li-ion, and NiMH batteries.
- Jim and Bob Lally Aeronautical Engineering Scholarship, Orchard Park STAP Comm Student Enrichment Scholarship, Orchard Park Class of 1983 Memorial Scholarship, New York State Department of Environmental Conservation Scholarship, New York State Seal of Biliteracy in Spanish and English

Extracurriculars

- Wharton Aerospace and Defense Club; Penn Aerial Robotics; Penn College Republicans; Wharton Entrepreneurship Club; Catholic Newman Community; SCUBA Diving Club; Penn Club Golf; Wharton Entrepreneurship Venture Incubator; Blockchain at Penn.