# ABHAY AGARWAL

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## EDUCATION

**UNIVERSITY OF PENNSYLVANIA, SCHOOL OF ENGINEERING + WHARTON** **Philadelphia, PA**
Bachelors of Science in Electrical Engineering (SoC) | M.S.E in Electrical Engineering **May 2028**
Bachelors of Science in Economics, Finance & Statistics | Benjamin Franklin Scholar **GPA 3.95/4.00**

**ADLAI E. STEVENSON HIGH SCHOOL** **Chicago, IL**
High School Diploma | Valedictorian | 1580 SAT **May 2024**
**Honors:** Gold Honor Roll; AP Scholar with Distinction; Illinois State Scholar; Coca-Cola Scholarship Semifinalist **GPA 4.00/4.00**
**Club Leadership:** President: Architecture & Engineering, Aerospace & Aviation, Entrepreneurship, History Fair

## TECHNICAL SKILLS

**Programming:** Verilog, SystemVerilog, Python, C, Java, OCaml; **Computer:** Vivado, Vitis, Altium, MS Suite, ML with PyTorch, Auto CAD; **Hardware:** HDL & ASICs, Circuit Design, PCB Design; **Soft Skills:** Problem Solving, Leadership, Adaptability, Curious

## RELEVANT COURSEWORK

Engineering Electromagnetics, Programming Languages & Techniques, Signal & Information Processing, Linear Algebra with Applications in AI, Partial Differential Equations, Tiny ML for Embedded Systems, Electrical Circuits & Systems, Electronic, Photonic, & Electromechanical Devices, Introduction to Economics, Introduction to Finance, Entrepreneurship & Technological Innovation

## PROFESSIONAL EXPERIENCE

**BIIO AI |Incoming FPGA Engineer Intern, Chicago, IL** **Winter 2025**
- Incoming 8-week Winter Intern at BIIO AI - Creating Edge-AI Processors for medical devices.
- Implement low latency non-invasive cardiovascular health monitor with FPGA Engineers.

**GRASP LAB | FPGA & AI Researcher at the University of Pennsylvania, Philadelphia, PA** **May 2025 - Present**
- Paid researcher at the Laboratory of Robotics & Learning at UPenn Grasp under Professor Pratik Chaudhari.
- Trained in Digital Design, Sequential and Combinational Logic, Computer Architecture, Xilinx Vivado Suite.
- Trained in Deep Learning, PyTorch & Computer Vision (Optical Flow).
- Trained MNIST to 95% Accuracy, Trained CIFAR-10 to 90% Accuracy, Implemented Language Translation via Transformers.
- Created projects on Arty Z7 FPGA: LED Chaser, Finite State Machines, Seven Segment Display Timer, VGA Signal Generator.
- Working on implementing optical flow on to FPGA to compare energy consumption vs a CPU for AV purposes.
- $8,500 grant from the Vagelos Integrated Program in Energy Research (VIPER) - 25 students.

**SCHOLASTIC CAPITAL | Real Estate Private Equity Analyst Intern, Chicago, IL** **May 2024 - August 2024**
- Summer Intern at a Private Equity Fund specializing in single-family homes in elite high school districts across the Midwest.
- Adapted advanced BlackRock investment models to integrate Scholastic Capital data for portfolio analysis.
- Incorporated a financial system to include purchased homes' equity into Home Price Appreciation (HPA) calculations.
- Automated equity, income, cost, and debt calculations to dynamically adjust for newly acquired properties.

**ILLINOIS INSTITUTE OF TECHNOLOGY | Student Researcher, Chicago, IL** **June 2023 - August 2023**
- Research Intern at the Department of Mechanical, Materials, & Aerospace Engineering, under Prof. Baisravan HomChaudhuri.
- Analyzed discrepancies in predicted positions between complex and linear simulated models of a soft robot.

**SANCTUARY FOR THE SKIES | Founder & President, Chicago, IL** **August 2022 - Present**
- Co-founded a 501(c)(3) nonprofit for avian conservation and sustainability; secured $25,000 in grants.
- Partnered with Illinois Ornithological Society and Illinois Audubon Society; raised $20,000 in sales via affiliate partnerships.

**HOLISTIC WORKSHOP | Chief Financial Officer** **August 2022 - Present**
- Oversaw a $10,000 outreach initiative supporting 550 children in India; installed green roofs at 8 rural schools.

## EXTRACURRICULAR EXPERIENCE

**PENN AERIAL ROBOTICS | Electrical Engineer** **September 2024 – Present**
- Design and program aerial control systems of a 15-foot-wingspan high-lift electric aircraft for competition at the SAE Aero Competition. Implement power distribution technology, PCB design, sensor integration for autonomous aerial systems.

**WHARTON INVESTMENT AND TRADING GROUP |Equities Analyst** **January 2023 - April 2024**
- Global Macroeconomics - pitched investment ideas based on inflation, and policy, created Discounted Cash Flow models.

**WHARTON ENTREPRENEURSHIP CLUB | Incubator** **June 2022 - January 2024**
- Creating a frozen Paneer Patty product in the Wharton Food Innovation & VIP Incubator programs, secured $2,000 grant.