Arav Bhargava

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EDUCATION

HARVARD COLLEGE   **Cambridge, MA**
B.S. in Electrical Engineering. Minor in Computer Science. **GPA:** 3.96   **May 2028**
Relevant Coursework: Computer-Aided Machine Design; Vector Calculus; Circuits, Devices, and Transduction (Spring 2026)
Student Groups: Harvard Ventures (Board), The Bottom Line (Host), Harvard Biotech Club, Harvard GAMI, Club Swimming
Awards: Regeneron Science Talent Search Top 40, VEX Robotics World Championship Qualifier; Capital Emmy Winner

SKILLS

Skills: PCB Design (KiCad), Circuit Design & Analysis, Embedded C/C++, Python, Machine Learning (TensorFlow, PyTorch, Scikit-learn, Pandas), Computer Vision (OpenCV, OpenPIV), CAD (Fusion 360, SolidWorks), FEA, FDM 3D Printing, Robotics

PROFESSIONAL EXPERIENCE

MOBILIS   **Cambridge, MA**
Founder, Accessible Prostheses for Developing Countries   **September 2021-Present**
- Designed and patented a <$40, accessible, size-adjustable prosthesis for upper-limb amputees in developing regions
- Rapid-prototyped and iterated 300+ designs with end-users and clinicians (Fusion 360, FDM 3D printing, FEA)
- Engineered novel BOA tensioning system, pseudo-silicone interior liner, and adapted mechanical hook/hand control
- Validated design through bench testing and user trials to meet ISO socket standards, achieving comfort ratings surpassing traditional prosthetics at <1% of cost; deploying in Ukraine and India (Dec 2025).
- Launched "The Prosthetic Experience" podcast (NPR National award-winner; 10,000+ Listens)
- Awarded Regeneron STS National Top 40 ($27,000); featured on *ABC News, Scripps News, 3Dprint.com, The 74*

HARVARD MICROROBOTICS LABORATORY   **Cambridge, MA**
Researcher, Selected as a PRISE Fellow to advance microrobotic applications   **May 2025-Present**
- Developed and open-sourced a Low-Turbulence Vertical Wind Tunnel for Microrobotic Insect Flight Testing with 44% reduction in turbulence; design to be used by MIT and Berkeley labs (KiCad, Fusion 360, C++)
- Designed a computer vision program to analyze wind particle flow and perform PIV analysis of microrobot aerodynamics (Python, OpenCV, OpenPIV)

CODA LLC   **McLean, VA**
Summer Associate, Leading Digital Provider to the Built Environment   **June-August 2023**
- Helped develop a new ML-driven approach to detect expensive errors in construction design (Revit, Dynamo)
- Wrote 3D model design check scripts with Dynamo to create an egress path program to sell to OSHA

FEATURED PROJECTS AND OUTSIDE EXPERIENCE

REAL-TIME TRAINABLE BIONIC ARM FOR IMPROVING ROBOTIC MODELS (Project)   **April 2025**
- Engineered EMG-to-bionic control system with analog filtering (20–500 Hz) and noise cancellation, reducing model training time to <2 minutes while enabling real-time, low-latency inputs
- Implemented a KNN classifier in C++ to control multi-servo tendon actuation; validated responsive hand motion via oscilloscope and EMG trials across multiple users

WEARABLE DISK TO TRACK HEALTH METRICS UNDER DESIGNER WATCHES (Project)   **July 2025-Present**
- Built an ultra-thin (≤3 mm) wearable disk that hides under designer watches to passively track health metrics with heart rate sensors, IMU, and other sensors via BLE (KiCad, Circuit Design)
- Producing an online user interface to display analyzed health data in comprehensive graphics

VEX ROBOTICS - POTOMAC ROBOTICS TEAM (Engineering Lead)   **September 2020-June 2024**
- Engineered, fabricated, and coded complex robots to compete in the VEX Robotics Competition at a global level
- Implemented pneumatic-controlled transmission systems; utilized C++ to create autonomous programs

HARVARD VENTURES (Board)   **January 2025-Present**
- Co-hosting and directing Harvard Ventures podcast "The Bottom Line" end-to-end
- Interviewing Fortune 500 founders on building extraordinary ventures (15,000+ listens)