Khush A. Patel

(717) 681-3979 — kpate151@jh.edu — U.S. Citizen
www.khushengineer.com

Objective

Mechanical engineering student seeking a summer internship in robotics or aerodynamic design. Passionate about applying CAD modeling, mechanical analysis, and fluid dynamics to develop efficient, real-world engineering systems.

Education

Johns Hopkins University, Whiting School of Engineering Baltimore, MD
Bachelor of Science in Mechanical Engineering Anticipated May 2029
Relevant Coursework: CAD and Design, Multivariable Calculus, Mechanics, Programming in Python, Electricity and Magnetism, Intro to Digital Electronics

Technical Skills

- **Software:** SolidWorks, ANSYS Fluent, MATLAB, Multisim, OnShape
- **Programming:** Python, MATLAB, C++ (Arduino)
- **Analysis:** CFD modeling, FEA, torque calculation, design optimization
- **Fabrication:** 3D printing, laser cutting, soldering, prototyping

Engineering Experience

Amarkosha Wind Harvester Start-Up Baltimore, MD
Mechanical Lead, Wind Energy Product Development Jul 2025–Present
- Lead mechanical design and CFD simulations for a vortex-induced vibration wind harvester prototype.
- Perform ANSYS Fluent analyses to evaluate lift, drag, turbulence, and oscillation amplitude.
- Verified 166% wind-speed amplification in low-pressure zone, validating prototype performance and earning selection for the SPARK Accelerator Program.

Johns Hopkins Mars Rover Team – Mechanical Subteam Baltimore, MD
Mechanical Member (Wrist Design) Sep 2025–Present
- Design a new 3-DOF wrist mechanism to enhance robotic arm dexterity and range of motion.
- Used torque calculations and CAD modeling to determine required motor output and load paths.

GreenWorks Development Mechanicsburg, PA
Technical Sales and Project Development Intern Jan–Aug 2025
- Conducted feasibility and energy modeling for solar installations using Helioscope.
- Presented results to institutional clients, supporting a $5M solar partnership initiative.

UPMC Magee–Women's Hospital Pittsburgh, PA
Research Assistant, Dept. of Anesthesiology (Dr. Andrea Ibarra) Jun–Sep 2024
- Managed quantitative data on pre-eclampsia and hypertension using R; standardized documentation workflow.

Projects

4-DOF Robotic Arm (Independent)
- Designed a 4-DOF robotic manipulator using SolidWorks and programmed motion control via Arduino and C++.
- Implemented real-time feedback for precise joint movement and position tracking with inverse kinematics.

Leadership & Honors

- **President & Founder, Renewable Energy Club (RENEW)** — Established student engineering team focused on sustainable energy advocacy.
- **Facilities Chair, Mini-THON** — Directed logistics and led team contributing to $280K+ raised for pediatric cancer research.
- **Honors:** Cumberland Valley Science Hall of Fame, William R. Pierce Physics Award, Lois Wolf Highest GPA Student-Athlete Award, Melissa Huang Memorial Scholarship.