Ayush Karkare

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Education

Purdue University *West Lafayette, IN*
Bachelor of Science in Aeronautical and Astronautical Engineering ***May 2027 (Expected)***
Minor: Certificate in Entrepreneurship and Innovation GPA: 3.96 / 4.00
Dean's List and Semester Honors
***Relevant Coursework*:** C Programming, Intro to Aero Design, Thermodynamics I, Aeromechanics I

Experiences

Scope Consulting *West Lafayette, IN*
Consultant ***August 2024 - Present***

- Developed an AI-powered chatbot to condense a 2.5-day financial literacy and succession planning course for farmers into a 1-day, interactive digital experience, addressing accessibility and time-efficiency challenges
- Conducted a feasibility analysis on using pre-existing chatbot frameworks versus custom AI development, balancing the need for cost-effective implementation with the delivery of tailored financial guidance

Purdue Formula SAE *West Lafayette, IN*
Team Member ***January 2024 - Present***

- Cooperated with a multidisciplinary team to integrate aerodynamic components with vehicle systems, focusing on optimizing performance through airflow analysis and design improvements
- Guided in hands-on aerodynamic testing and simulation processes, acquiring skills in advanced computational tools, and contributing to data-driven design decisions to enhance vehicle efficiency and performance

Boilerexams *West Lafayette, IN*
Relations Team Member ***March 2024 - Present***

- Coordinated with university directors and academic staff to explore and establish partnerships, showcasing the value and benefits of the software in improving the educational experience
- Managed the end-to-end process of software implementation projects with partner universities, from initial contact to deployment and feedback collection

Design Projects

Electric Bike Conversion Project ***June 2024 - Present***

- Designed and modeled a custom housing and motor assembly for an electric bike conversion using Siemens NX, incorporating standard parts from McMaster-Carr to ensure compatibility and streamline assembly
- Prototyped components using a 3D printer, iteratively testing and refining the fit and durability, ensuring compatibility with a bike's existing frame and mechanical systems
- Integrated electrical components through the VESC tool, configuring and programming the motor controller to achieve optimal performance and reliability, demonstrating a hands-on approach to electrical engineering principles

Biophotovoltaics Product Research and Development ***November 2023 - Present***

- Presented Biovolt, a sustainable energy solution for farmers, to a panel of judges, securing $2,500 for further product development through the Purdue University Moonshot Pitch Challenge and PA Governor's STEM Competition
- Partnered with Purdue Innovates, lawmakers, a team of multidisciplinary engineers, and farmers to refine the concept of Biovolt, ensuring its feasibility and market potential

VEX Robotics Team Designer and Builder ***September 2016 - May 2023***

- Designed and contributed to the ideation, development, and design of robot components using technical drawings, prototypes, and CAD Software to improve the functionality of the robots
- Recognized with the prestigious Design Award at the World Championship, acknowledging excellence in the ideation, development, and design of robot components, highlighting a high level of expertise and innovation in the field

Skills/Awards

- ***Technical* –** Fusion 360, Autodesk Inventor, Siemens NX, C++, Microsoft Office, Arduino Programming, Python, MATLAB, 3D Printing
- ***Languages* –** Hindi (Native Proficiency), German (Limited Working Proficiency)
- ***Awards/Certifications* –** Eagle Scout (Class of 2020)