Aarav Bedi

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Education

University of California, Berkeley Aug 2022 – May 2026
Bachelor of Science in Mechanical Engineering with Mechatronics concentration *Berkeley, California*

Technical Skills

Technical Skills: SolidWorks, CATIA, PTC Creo, Fusion 360, AutoCAD, Siemens NX, Altair HyperMesh FEA
Engineering Software: ANSYS, Cadence, LabVIEW, Simulink, TruckSIM, SmartUQ
Manufacturing: Welding, Milling, CNC Machining, 3D Printing, 3D Scanning, Instron Machine, Laser cutting, TIG, Waterjet, Wood shop, Lathes, Polyjet Printers
Programming Languages: Python(intermediate), C++(Basic), MATLAB, Arduino

Experience

Litrix Dec 2023 – Nov 2024
Founder, CEO *Berkeley, California*

- Leveraged AEM hydrogen fuel cell technology enhanced by AI to cut costs, boost performance, and drive zero-emission heavy-duty vehicles toward a sustainable future.
- Achieved a 60–80% increase in fuel-to-electricity conversion efficiency, a 90% reduction in harmful emissions, and a 27.4% performance gain compared to current market fuel cells.
- Runner-up in the HeroX USA competition; selected for SkyDeck Berkeley and NSF I-Corps Cohort; forged key industry relationships with Toyota, Hyundai, Nikola Trucks, Sandia Laboratory, Bosch USA, and PACCAR.

PACCAR May 2024 – Aug 2024
Structural Analysis Engineering Intern *Seattle, Washington*

- Executed Root Cause Analysis for FEA-driven testing and optimization on next-gen truck models, battery packs, and advanced sensors using HyperWorks 2021.2.
- Enhanced compliance and quality assurance by delivering modal and static analysis with sub-250MPa stress levels and displacements above 20Hz on A36 Steel boosting efficiency by 40% using HyperMesh 2024's PhysicsAI
- Worked in the shadow of senior engineers, gaining valuable insights into product design for heavy-duty vehicles and focusing on integrating customer service considerations to enhance overall user experience.

Formula Electric Berkeley Aug 2022 – June 2024
Aerodynamics Lead *Berkeley, California*

- Directed a cross-functional team of 20, transforming manufacturing and aerodynamic designs to exceed efficiency targets ahead of schedule and boost performance by 10%.
- Optimized 14+ models and cut timelines by a month using advanced CAD, CFD and FEA simulations.
- Mentored 23 new members in advanced CFD (ANSYS), Composite-FEA, and CAD, accelerating onboarding.
- Designed and tested high-performance aerodynamic prototypes, integrating electro-mechanical elements for enhanced vehicle design.

Projects

Mazda Miata Redesign Jan 2024 – Aug 2024
Personal Project *Berkeley, California*

- Engineered a high-performance transformation of a 1992 Mazda Miata by turbocharging the 1.6L engine, boosting horsepower from 120 to 190hp aligning with measurable key performance indicators (KPIs).
- Redesigned the system with precision pistons, CAD components, and a custom 3D-printed dashboard to monitor turbo and coolant metrics, integrating statistics for real-time performance tracking.

Smart Helmet Aug 2024 – Jan 2025
Personal Project *Berkeley, California*

- Designed and optimized the helmet's aerodynamics using advanced CAD, CFD, and FEA tools (MATLAB and SolidWorks), achieving a 17% reduction in drag while maintaining structural integrity.
- Developed an IoT-based sensor system with an ESP32 microcontroller (programmed in C/Arduino) and Python-driven data analysis to enable real-time collision detection, reducing emergency response time by 40%.