Rayyan Hisham

+1-657-250-6871 | rayyanhisham@outlook.com | linkedin.com/in/rayyanhisham

Education

California State Polytechnic University, Pomona — Pomona, CA
B.S. Mechanical Engineering — *2024 – Present*

Fullerton College — Fullerton, CA
A.S. Engineering, Physics, Mathematics — *2022 – 2024*

Projects & Experience

Cal Poly Pomona Formula SAE | Bronco Motorsports — Vehicle Dynamics Team — Jun 2025 – Present

- **Suspension system design:** Designed an inboard suspension setup, optimizing damper, bell crank, and pull-rod geometry to achieve target static motion ratios with progressive wheel-rate vs. heave response.
- **Analysis & validation:** Developed MATLAB models and SolidWorks CAD models with fully defined GD&T drawings for manufacturing; performed FEA on all components to verify design under calculated max loads.
- **Shop & machining experience:** Fabricated and assembled vehicle components using manual machining tools, fixtures, and shop equipment.

Ice Cream Scooping Robot | 5-axis Robotic Arm — Design Engineer Lead — May 2024 – Present

- **CAD & mechanical design:** Designed a 5-axis robotic assembly in SolidWorks; implemented a belt-driven arm reducing required torque by up to 90% versus direct-drive designs.
- **Project documentation:** Updated BOMs; wrote design and stress analysis documentation; created a presentation pitch for project funding.
- **Fabrication & assembly:** Machined and fabricated components from CAD drawings; assembled robotic prototypes to specification.

Thrust-Vector Rocket | PID-Controlled Rocket Model — Design Engineer — Mar 2023 – Jun 2024

- **Airframe & control systems:** Designed a thrust-vectoring gimbal and verified center-of-pressure and center-of-gravity alignment to improve flight stability.
- **Mass optimization:** Developed a functional rocket under a strict 750g mass constraint while maintaining structural integrity.
- **Testing:** Verified weight balance and component placement to maintain CG and CP targets throughout testing.

Technical Intern | Clayton Engineered Solutions — Jun 2021 – Aug 2021

- **Process evaluation:** Manufactured electromechanical assemblies; worked on improving production efficiency while adhering to manufacturing standards.
- **Continuous improvement:** Reduced assembly time and improved workflow efficiency.

SEMA Engine Build Competition — Team Captain — Sep 2018 – Mar 2020

- **High-speed rebuilds:** Led a competitive team completing 250+ timed engine rebuilds with precise torque specifications.
- **Diagnostics & workflows:** Strengthened expertise in engine diagnostics and assembly while executing under time constraints.
- **Technical proficiency:** Developed a strong foundation in mechanical hand tools and internal combustion engines.

Summer Undergraduate Research | Cal Poly Pomona — May 2024 – Aug 2024

- **Model benchmarking:** Studied convolutional neural networks and their advantages and limitations.
- **Experimental analysis:** Analyzed training time, accuracy, and performance across multiple train/test splits.
- **Technical reporting:** Documented experimental results and authored an unpublished technical research paper.