

Rayyan Hisham

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EDUCATION

California State Polytechnic University, Pomona

B.S. Mechanical Engineering

Pomona, CA

2024 – Present

Fullerton College

A.S. Engineering, Physics, Mathematics

Fullerton, CA

2022 – 2024

TECHNICAL SKILLS

Skills: Vehicle Dynamics, 3D printing, Robot Design, Kinematics, Teamwork, Collaboration, Leadership

Programs: SolidWorks (CAD/FEA), MS Office (Word/Excel/Powerpoint), MATLAB, Python, Arduino IDE

Coursework: Stress Analysis, Project design, Manufacturing Processes, Robot Motion Planning, Vector Dynamics

EXPERIENCE

Undergraduate Research

May 2024 – Aug 2024

Cal Poly Pomona

Pomona, CA

- Model benchmarking:** Studied image-classification efficiency by comparing modern Convolutional Neural Network (CNN) architectures across datasets and parameter budgets.
- Data splits & metrics:** Tracked metrics and experimented with different train/test splits to find the most efficient balance for the fastest training time and best results.
- Experimentation & reporting:** Documented train/test experiments, repeated experiments for several variants of EfficientNet CNN models, and compared results to identify best uses for each model; produced an *unpublished* technical paper.

Manufacturing Intern (Unpaid)

Jun 2021 – Aug 2021

Clayton Engineered Solutions

Placentia, CA

- Process analysis:** Discussed manufacturing processes for parts and machinery based on assembly complexity and the most efficient manufacturing methods, while adhering to all engineering and electrical standards.
- Assembly & fabrication:** Manufactured hospital ventilators, electric motors, and electrical wiring boxes using provided CAD drawings and basic hand tools.
- Continuous improvement:** Collaborated with engineers on basic assembly tasks and provided process observations to improve manufacturing methods while reducing production times.

PROJECTS

Cal Poly Pomona Formula SAE | Bronco Motorsports (Vehicle Dynamics Team)

Jun 2025 – Present

- Suspension design:** Design and analyze control arms, uprights, and suspension kinematics in SolidWorks; assist with alignment (camber/caster/toe) and testing for best performance.
- Manufacturing processes:** Contribute to manufacturing decisions for prototype components (injection molding, stamping, casting, and welding—MIG/TIG/spot) in coordination with the manufacturing team.
- Cross-team integration:** Collaborate with subsystem teams to ensure compatibility, formability, and performance integration of designed components.

Ice-Cream Scooping Robot | 5-axis autonomous robot (Mechanical lead)

May 2024 – Present

- CAD design:** Design a 5-axis robot assembly in SolidWorks to meet project objectives. Belt-driven arm design reduces required torque demand by up to 90% at each arm, compared to conventional direct-driven robot arms.
- Actuation & kinematics:** Implement design for reliable scoop/serve cycles in a constrained freezer environment.
- Fabrication & assembly:** Fabricate components from CAD drawings and assemble the robot to specification.

Thrust-Vector Rocket | PID controlled rocket model (Design lead)

Mar 2024 – Jun 2025

- Airframe & control:** Designed a thrust-vectoring gimbal; calculated and simulated center of pressure/gravity for improved rocket stability.
- Weight management:** Developed a functional rocket model while maintaining a weight constraint of 750g.
- Design iteration:** Designed mounts for electrical components and developed more efficient iterations of already existing components for weight reduction, and optimized weight distribution.

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| SEMA Engine Build Competition Team Captain | Sep 2018 – Mar 2020 |
| • High-speed rebuilds: Coordinated a competitive crew completing 250+ timed engine rebuilds (~ 20 minutes each) with precise torque specifications and tuning. | |
| • Diagnostics & workflows: Strengthened internal-combustion diagnostics, assembly workflows, and execution under time pressure. | |
| • Technical proficiency: Developed a strong understanding of mechanical hand tools and IC engine manufacturing processes by completing the competition's written examination. | |

CERTIFICATIONS

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| Automotive Service Pollution Prevention – S/P2 | 2020 |
| Wheel Handling – Snap-on Corporation | 2019 |
| Hand Tools Safety – Snap-on Corporation | 2018 |
| Digital Multimeter – Snap-on Corporation | 2018 |

LEADERSHIP & ACTIVITIES

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| Social Media Entrepreneur | Sep 2019 – Present |
| • Operations & content: Manage product inventory and media production across social channels. | |
| • Community sales: Build partnerships at sneaker community events and convert interest into sales via timed product drops. | |
| Neural Hack Club Secretary & Co-Founder | Jan 2024 – May 2024 |
| • Operations & collaboration: Organized club operations and collaboration; fostered peer learning and project building. | |
| Political Campaign Volunteer Al-Jabbar for Anaheim City Council | Nov 2021 – Nov 2022 |
| • Voter outreach: Canvassed neighborhoods and staffed phone banks to inform voters about election logistics; logged contact outcomes in the campaign CRM. | |
| • Event logistics: Coordinated volunteer shifts, staging locations, and literature drops; delivered yard signs in line with city guidelines. | |