

# 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

*Cal Poly Pomona*

May 2024 – Aug 2024

*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several variants of EfficientNet CNN models, and compared results to identify best uses for each model; produced an *unpublished* technical paper.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)

*Clayton Engineered Solutions*

Jun 2021 – Aug 2021

*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.

## 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.