

# Johnny Vo

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## Skills

**Software:** Solidworks CAD, Engineering Drawings, FEA (Novice), Microsoft Powerpoint (Proficient), MATLAB (Proficient)

**Engineering:** Vehicle Dynamics, Drivetrain Systems, Test & Development Data Acquisition, DFM, FMEA, GD&T

**Technical:** 3D Printing, Lathe/Mill Operation, Laser Cutting, Waterjet Fabrication, TIG/MIG Welding

## Engineering Projects

**Autonomous Modular Robot Arm**, Mechanical Engineer – Orange, California May 2025 – Present

- Designed a spring-loaded belt tensioner using mechanical first principles to maintain belt preload and extend lifespan, further improving motor to belt precision
- Developed CAD models and prototypes for a belt-driven 5-DOF actuation system powered by NEMA motors
- Integrated idler pulleys and shafts to support spring loaded tensioner, allowing for proper belt tracking a smooth actuation control

**Baja SAE Offroad Vehicle**, Powertrain Engineer – Pomona, California June 2024 – Present

- Designed and manufactured hollow axle shaft capable of withstanding at least 440 lb-ft torque with a static torsional FOS of 1.43 against yield
- Field-validated axle shaft performance using strain gauges to analyze torsional stress predictions
- Coordinated manufacturing to gundrill and gear hob axle shafts to reduce weight by 29%, improving performance
- Designed and manufactured a carrier bearing support that improved drivetrain alignment and increased radial clearance by 10%
- Designed and manufactured a transmission cooling system that successfully operated through 8+ hours of off-road endurance testing and competition
- Conducted torque, shear, and spline stress calculations on hollow tubing and shafts using engineering fundamentals to validate FEA

## Experience

**Manufacturing Engineering Intern**, Redline Detection – Orange, California June 2024 – August 2024

- Supported R&D for leak diagnostic systems; conducting structural testing, and lab trials on company products
- Performed Quality Control inspections, structural test setups, and data verification
- Contributed to design reviews and technical documentation for engineering validation

**Machine Learning Intern**, California State University of Fullerton – Fullerton, California June 2023 – August 2023

- Developed a convolutional neural network to perform image processing in Python using TensorFlow and Keras
- Implemented a multi-player CNN architecture (convolution, pooling, softmax) achieving 98% on MNIST

## Education

**Cal Poly Pomona** – B.S. Mechanical Engineering (In Progress) 2024-2027

**Santiago Canyon** – A.S. Math & Science 2022-2024

**Santiago Canyon** – A.D.T Physics 2022-2024