

Vaibhav Jayakumar

Mechanical Engineering @ Cal Poly SLO

vjayakum@calpoly.edu | vjayakum@calpoly.edu | vjayakumar.com | www.linkedin.com/in/vaibhav-jayakumar | Fremont, CA

Education

- California Polytechnic University at San Luis Obispo | B.S. in Mechanical Engineering | Graduation: 2028
- Coursework: Engineering Design, Statics, Materials Science, Subtractive Manufacturing, Welding, Measurement & Data Analysis, Linear Analysis, Mechanics, Electricity & Magnetism, Waves & Optics

Skills

- *CAD*: SolidWorks, Fusion 360, Inventor, Onshape | *Manufacturing*: CNC Machining, Lathe, FDM/SLA/SLS 3D Printing, Soldering, Mechanical Assembly | *Programming/Tools*: MATLAB, Python, Java, PrusaSlicer, Bambu Studio | *Lab Skills*: Tensile Testing, Durability Testing, CT Scanning, Design Verification (DV) testing

Leadership & Work Experience

R&D Engineering Intern | Align Technology | San Jose, CA June 2026 - August 2026

- Supported Design Verification (DV) testing for the Invisalign Palatal Expander (IPE), a Class II orthodontic medical device used to expand a patient's upper palate
- Reduced user-to-user variability in DV testing by designing and prototyping a new fixture system in SolidWorks through 9+ design iterations
- Conducted 34+ insertion and removal tests to characterize forces applied during insertion and removal of the IPE
- Developed a Python tool using pandas and NumPy to clean force-time data, detect insertion/removal events, filter outliers, and automate Excel reporting
- Developed and tested three Class I medical device IPE accessory concepts, achieving a 42:1 mechanical advantage and submitting an Invention Disclosure Form (IDF)

Mechanical Engineering Intern | Food Tech Startup in Stealth Mode | Fremont, CA June 2024 - July 2025

- Manufactured 20+ egg cooking robots utilizing Fusion 360, CNCs, SLA printers, drill presses, and table saws
- Rapid prototyping with 3D printing and CNCs: iteratively refining parts to optimize functionality and packaging
- Assembled electrical components, soldered PCBs, and optimized layouts for efficient electrical integration
- Constructed a Prony Brake dynamometer to test motor torque, ensuring efficient and consistent performance
- Optimized mechanism efficiency by refining blade angles, arm movements, and hot plate designs

Team Captain, Mechanical Lead, Team Member | First Tech Challenge (FTC) | Fremont, CA Aug 2020 - Jan 2024

- Team Captain - Techarinos 18767 (2020 - 2021)
 - Led the mechanical design team of 5 to create and design a 3D-printed claw using Onshape
 - Led an outreach initiative to teach over 120 kids Scratch and basic programming
- Ranked top 18th FTC team by FUN Robotics Network (Future 14473) (2022)
- Team Captain, Mechanical Lead - Blizzard Robotics 18373 (2023)
 - Led a team of 8 to develop a qualifying robot for the 2023 FTC Centerstage season
- Designed, manufactured, and constructed compact lift, intake, and drivetrain mechanisms using Fusion 360

Entrepreneur in Residency & School Representative | Pilotcity Inc. | Fremont, CA Mar 2023 - July 2025

- Used Fusion 360 to design and manufacture 25+ 3D-printed engineering kits: a reusable, lightweight flywheel-powered toy car
- Mentored 9 interns and organized weekly check-ins, ensuring successful program completion

Lead STEM Instructor & Student Engagement Leader | TinkerOn Labs | Fremont, CA May 2024 - July 2025

- Designed and led hands-on STEM programming for 60+ students and 200+ Fremont Science Night attendees

Intern & Volunteer (Coach, Fundraiser) | African Library Project June 2017 - July 2025

- Led 17 book drives across 7 countries; donated 15,000+ books and raised \$7,500 (PVSA Gold Award)