Arnav Akarte

(U.S. CITIZEN)

(408) 391-1210 | arnavakarte@gmail.com | LinkedIn | www.arnavakarte.com

Summary

Mechanical Engineer with hands-on experience in aerospace hardware integration, environmental testing, and design validation. Proven success leading technical projects from satellite final assembly to propulsion system development. Skilled in CAD, predictive modeling, and materials selection, with a strong foundation in DFM, rapid prototyping, and cross-functional collaboration.

Skills

- **Design & Analysis:** SolidWorks(CAD/CAM), Fusion360(CAD/CAM), FEA, MATLAB, Simulink.
- **Manufacturing:** CNC and Manual Mill/Lathe, Shop Tools, Hand Tools, GD&T, DFM, rapid prototyping, 3D printing (Prusa, Cura).
- **Testing & Validation:** TVAC, thermal cycling, vibration, BIST, calibration, sensors.
- **Soft Skills:** Technical communication, cross-functional collaboration, leadership.
- **Programming:** MATLAB, C++, Python, HTML, Java.
- **Production Tools:** JIRA, Confluence, MES/SAP, Slack.
- **Certifications:** MIT AI/ML.

Experience

Amazon - Project Kuiper - Integration & Test: *Amazon*

- Orchestrated final assembly and validation of 250+ mechatronic units for aerospace systems, ensuring readiness for flight operations.
- Diagnosed complex electromechanical issues with an increased first-time fix rate, reducing rework time and increasing testing uptime.
- Executed BIST, calibration, and environment testing (TC, TVAC, vibration, HASS), contributing to minimal test escapes on flight-certified units.
- Performed integration and test operations on multiple subsystems, including OISL(patch fibers, optical systems, OHA's), electric propulsion units, harnessing, RWA's, torque rods, PAA's, and solar arrays.
- Drove a reduction in non-conformance reports and boosted assembly efficiency through process improvements, data-driven insights, and DFM-aligned feedback loops.

LMU Rocket Team Lead: *Loyola Marymount University*

- Led nozzle design, calculations, material selection, FEA, injection and ignition mechanisms, demonstrating technical leadership.
- Developed hybrid rocket test stand and data collection system; led to effective static fire test, paving way for future iteration.
- Designed a predictive model improving burn efficiency by 20% and informed propulsion system tuning.
- Represented team as exhibitor/presenter at Reaction Research Society Symposium.

Assistant Machining Technician: *Loyola Marymount University Machine Shop*

- Proficiency in mastering multiple additive manufacturing softwares/slicers and machines (Prusa, Cura).
- Machined precision components using Haas CNC equipment; proficient in G-code programming for multi-axis parts.
- Performed academic and research fabrication needs through subtractive and additive manufacturing methods, increasing output by 27%.
- Trained students on safe operation of manual and CNC machines; maintained shop standards and quality control.

Undergraduate Research Assistant / Thesis Co-Author: ` *Loyola Marymount University*

- Spearheaded research on additive manufacturing with titanium alloys, uncovering groundbreaking insights.
- Conducted experimental study on Ti6Al4V alloy stress behavior under various heat treatments using tensile and fatigue testing.
- Selected and validated post-processing treatments for laser powder bed fusion parts, improving reliability and mechanical performance.
- Co-authored manuscript submitted to *Journal of Materials Engineering and Performance.*

Archbishop Mitty FRC Robotics Lead *Archbishop Mitty High School*

- Mastered CAD and CAM to engineer a robot chassis and drivetrain, demonstrating technical prowess.
- Exercised leadership to guide a student team, making strategic decisions and mediating conflicts.
- Orchestrated meetings and subsystem communication, ensuring team collaboration and a high-quality product.
- Achieved expertise in both Fusion 360 and SolidWorks, optimizing design and manufacturing processes.

Education

University of Southern California *Expected May 2027*

Master of Science in Mechanical Engineering/Engineering Management

Loyola Marymount University

Bachelor of Science in Mechanical Engineering, Minor in Business Administration

Relevant Coursework: Statics, Dynamics, Design for Manufacturing(Injection Molding, Sheet Metal, CNC Milling), Design for Additive Manufacturing, Control Systems, Aerodynamics, Composites, Material Science, Fluid Mechanics, Spacecraft, Propulsion, MATLAB, Management of Systems Integration.