Shubh Raval

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Education

Georgia Institute of Technology **August 2024 - May 2026**

Master of Science in Mechanical Engineering GPA: 3.75

University of California, Los Angeles (UCLA) **September 2021 - June 2024**

Bachelor of Science in Mechanical Engineering GPA: 3.60

Technical Skills

Software/Technologies: Solidworks CSWA, Fusion 360 & FEA, Solidworks FEA, Ansys, Smartsheets, Microsoft Projects, Microsoft Visio, LTspice, Onshape, ROS2 Humble, Moveit Motion Planning, Abaqus CAE, Git, Bash, Powershell

Languages: Python, C++, XML, URDF, MATLAB, Simulink, Simscape, HTML, CSS, JS

Engineering: GD&T, DFM, DFA, Design V&V, Manufacturing Instructions, Template Development, Lean Six Sigma, Standard Work, Agile Methodologies, Kanban, Compliant Mechanisms

Rapid Prototyping: FDM, SLS, Manual Machining, CNC Machining, Soldering, Composite Bonding

Technical Experience

Kazvu Labs **June 2024 - Onwards**

Electro-Mechanical Engineer I

- Co-led mechanical design and software development of a novel modular 7-DOF cobot for commercial, human-centric environments, optimized for fast, extended-reach, and complex manipulation tasks
- Pioneered a novel multi-objective kinematic optimization framework to explore 500+ robot arm designs, combining forward kinematics for workspace analysis with polynomial modeling and inverse kinematics-based pose probability mapping—resulting in a final design with a 47% larger dexterous workspace than the UR10e, relative to arm size
- Served as software technical program manager for proprietary robotic motion planning GUI, overseeing feature driven development, testing, and deployment utilizing agile methodologies with kanban system for project tracking
- Authored and maintain ROS2 robot description with tool permutations and package generation, using Python (scripts), XML (macros), and YAML (configurations) to support motion planning GUI development within a CICD pipeline

Amazon Robotics **January 2023 – June 2023**

Hardware Engineer Co-Op

- Led the Design Verification process development and testing of package sortation cart with 800,000+ active units in North America and upcoming package sortation cart both interfacing with autonomous robotic systems in Amazon Fulfilment Centers.
- Identified and resolved 5+ non-conformities through comprehensive verification testing
- Authored 2 detailed Design Verification procedures serving as verification deliverables for 60+ specifications
- Performed testing using a variety of measurement devices, coordinated with additional stakeholders to drive robotic and random vibration testing, Designed and Fabricated jigs and sheet metal brackets for load based testing
- Designed Sheetmetal pinch guard for rapid prototyping of ergonomic requirement of pinch guards for design of new carts

Medtronic Neurovascular **June 2022-August 2022**

Global Operations & Supply Chain Engineering Project Management Intern

- Led the creation of new Lessons Learned template, streamlining of PMO Playbook, consolidation of best practices from prior transfer programs, and update to Phase Gate Review template.

Kairos Power **January 2022-June 2022**

Mechanical Engineering Co-Op- Test/R&D Engineering

- Led mechanical design of 304 SS squealers for use in high temperature fluoride salt pump to detect vertical and horizontal deflections less than 1/8in, used FEA to iterate design considering impact loading, created drawings for use in EDM manufacturing using GD&T
- Created 6-part aluminum mold for abs pellets aiding development of test unit's reactor core to simulate fluid flow
- Improved impeller manufacturability by developing foils to be machined and welded instead of unibody machining, reducing lead time from 3 months to 2 weeks

Applied Composites **June 2021-September 2021**

Mechanical Engineering Intern- Continuous Improvement

- Led CI project for SpaceX Falcon 9 thermal protective system manufacturing (TPS) resulting in a 33% increase manufacturing efficiency over 32 parts and about $7000 material cost savings
- Developed Manufacturing Instructions and Training Program using Standard Work and Lean for TPS manufacturing
- Designed 75+ Ultem jigs and 100+ cut kits using Solidworks and Patternsmith to be used in new automated Pyron processing

The Boring Company **March 2021-May 2021**

Manufacturing Engineering Intern

- Worked as a liaison between engineering, production, and purchasing teams and reported daily production status using ANDON format to senior level management and oversaw efficient production of +25 parts using Smartsheets