Charlie Hill

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Loyola Marymount University (LMU) **Los Angeles, CA**
BS, Mechanical Engineering (Dean's List: Fall 2024, Spring 2025) *Expected May 2026*

ENGINEERING EXPERIENCE

TDA Magnetics **Rancho Dominguez, CA**
Engineering & Project Manager Intern *May 2025 - August 2025*

- Led work instruction development for flagship part generating 25% of company revenue over 5 years
- Designed thermal sleeving fixture in SolidWorks, eliminating $10K/batch rework and reducing insertion failures.
- Transitioned grinding from Blanchard to double disc methodology, improving finish and reducing cycle time.
- Implemented AQL sampling protocols, reducing QC inspection time by 40% while maintaining defect detection.
- Optimized chevalier block slicing process through workflow analysis, reducing setup by 5 min.

Engineering Intern *July 2024 - August 2024*

- Automated SolidWorks fixture design using macros and design tables, reducing creation from 15 min to 10 sec.
- Resolved month-long halt affecting 15% of orders by redesigning fixtures using TPU, restoring full production.
- Implemented 5S and FIFO methodology for fixture storage, reducing retrieval time from 3 min to 10 sec.
- Presented weekly design improvements to the engineering team, leading optimization discussions.

DOSE **Los Angeles, CA**
Engineering Design Lead *September 2024 - December 2024*

- Designed/prototyped nicotine vaporizer harm-reduction device with usage lockout feature.
- Delivered working prototype in 4 weeks, integrating SolidWorks and electronics.
- Won TechStars Weekend & BEST Bootcamp, showcased at LMU Business Incubator.

RESEARCH & PROJECT EXPERIENCE

Loyola Marymount University **Los Angeles, CA**
Rains Research Fellow with Dr. Rafiqul Noorani & Xiaodong Sun *January 2024 - Present*

- Optimized copper/316L stainless steel FFF printing; increased part density through DOE parameter tuning.
- Designed scaffolding and made kiln refinements to reduce debinding and sintering defects.
- Conducted DOE on PLA surface roughness (3× factors), results adopted by peers for lab optimization.

Mountain Bike Front Suspension Simulation *July 2025 - Present*

- Developed MATLAB simulation model for mountain bike air fork validated against SolidWorks Motion.

G-code Modifier Tool *July 2025 - Present*

- Built Python command-line tool to automate 3D print G-code edits, cutting time by eliminating slicer re-runs.

TECHNICAL SKILLS

CAD & Design: SolidWorks (Advanced), OnShape, GD&T, Product Design, Design for Manufacturing
Manufacturing: 3D Printing/FFF, Laser Cutting, EDM, CNC, Materials Testing, Process Optimization
Analysis & Programming: FEA, MATLAB, Design of Experiments, Python, C++, Data Analysis
Hardware & Tools: Arduino, Raspberry Pi, Microsoft Office, NI Multisim

PROFESSIONAL AFFILIATIONS

American Society of Mechanical Engineers (ASME) *August 2022 - Present*
Lions Mechanical and Aerospace Research Society *August 2022 - Present*

Clubs: Baja Lions Racing, Additive Manufacturing Club, LMU Bike Club