

# Allan Chen

Los Angeles, CA | (415) 769-8653 | allanchen053@gmail.com | [linkedin.com/in/allanjenchen](https://www.linkedin.com/in/allanjenchen) | [Portfolio](#)

## EDUCATION

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### University of California, Los Angeles

*Expected Graduation June 2026*

B.S., Aerospace Engineering

**Relevant Coursework:** Thermodynamics, Fluid Mechanics, Engineering Materials Science, Dynamic System Modeling, Rigid Body Dynamics, Statics, Electricity & Magnetism, Electronic Circuits

## SKILLS

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**Software:** NX, Teamcenter, SOLIDWORKS, REFPROP, Python, MATLAB, Fusion 360, ANSYS FEA, HSMWorks CAM, C++, JavaScript

**Manufacturing:** GD&T, 3 Axis CNC Machining, TIG Welding, Mill, Lathe, 3D Printing, Laser Cutting, Composite Layups

## EXPERIENCE

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### Stage Fluids Intern | STOKE Space Technologies

*Sep 2024 – Dec 2024*

- **Responsible engineer for flight vehicle cryogenic thermal management system** development campaign; scoped and conducted mechanical property characterization testing, and arranged procurement with suppliers for scaling production.
- Executed design, analysis, and testing of components for engine and stage fluids systems; **authoring work plans** to facilitate the production, assembly, inspection, and testing of development articles and production units through **life cycle qualification, proof, and acceptance tests**.
- Led test campaign on flight fastener and secondary structure mounting solutions; characterized performance across operating modes and **created sizing and analysis tools** in Python with **integration into design workflows and usage guidelines** for flight applications.
- Organized and populated company-wide knowledge base regarding cryogenic thermal management systems, including development, design, analysis, production processes, inspection criteria, proof and acceptance requirements.

### Lead Engineer - Liquid Propulsion Fluid Systems | Rocket Project at UCLA

*July 2023 – May 2024*

- Spearheaded design of Ethanol - LOx liquid rocket fluid system **integrating novel propellant flow throttling capabilities**.
- Oversaw the complete lifecycle of pressure vessel development and testing; from initial design and analysis through development article qualification and flight article acceptance testing.
- Designed and qualified fluids components, scoped qualification testing, and performed hands-on manufacturing and testing of flight vehicle fluids system.

### Lead Engineer - Hybrid Propulsion Fluid Systems | Rocket Project at UCLA

*Dec 2022 – June 2023*

- Guided a cross-functional team of student engineers through the **development of a hybrid rocket fluid system**, integrating Nitrous Oxide liquid oxidizer and solid ABS thermoplastic fuel.
- Carried out **pad operations on multiple static tests**, identifying and addressing system-wide issues, and amending testing procedures to ensure nominal system performance while reducing cycle times.
- Performed **hand calculations and Finite Element Analysis** to assess system structural requirements. Achieving 15% mass reduction over preceding systems with an adequate margin of safety.

## PROJECTS

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### Thrust Vectoring Liquid Rocket

*Jan 2023 – Present*

- Researched and designed a 100 lbf long burn Ethanol - Nitrous Oxide rocket propulsion system for use as a control system testbed, with **engine gimbal and variable propellant flow control capabilities**.
- Manufactured and assembled major hardware systems including pressure vessels, engines, primary structural members, ground support equipment, and fluid systems; scoped and carried out integrated vehicle testing.
- Applied rigorous hand calculations, incorporating **fundamental rocket equations, isentropic relations, and incompressible fluid mechanics** in propulsion system design around target specifications.
- Constructed a **regeneratively cooled rocket engine MATLAB thermal model**, providing a sophisticated simulation of **mechanical and thermal stresses, and approximating effects of chamber film cooling** fed by engine coolant.