Kenneth Chew

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Professional Summary

Mechanical engineer experienced in cradle-to-grave project ownership and hardware development in fast-paced startup environments. Familiar with standard aerospace design practices and execution of 3D CAD design, GD&T, manufacturing, and integration. Capable of working efficiently in interdisciplinary teams to achieve goals quickly and effectively.

Skills

3D CAD Design – Siemens NX, SolidWorks, CATIA V5, and Autodesk Inventor. FEM stress and vibration analysis.
Design for Manufacturing (DFM) – GD&T, 3D-printing, sheet metal and CNC manufacturing practices.
Integration and Assembly – Engineering and assembly drawings, work instructions, selection and installation of fasteners and retention devices.
Flight Testing – Creation of test campaign criteria and test cards, evaluating risk matrices, reviewing test data
Electrical Wiring – Soldering, wire harness assembly, insertion and ejection of various connectors and contacts.

Certified SolidWorks Associate (CSWA) – Dassault Systèmes

Private Pilot License – Federal Aviation Administration (FAA)

Experience

Reliable Robotics – ***Mechanical Engineering Intern*** ..... **March 2023 – August 2023**

- Developed components for an autonomous flight conversion kit, enabling existing aircraft to operate fully autonomously from startup to shut-down.
- Owned the entire design-to-test development cycle of the landing gear wheel speed sensing system.
- Designed and conducted stress analysis on many components using Siemens NX, FEM, and hand calculations.
- Referenced FAA and NASA guidelines and regulations to ensure safety, such as the MMPDS and AC 43.13-1B.
- Built and operated a custom test bench to characterize inductive proximity sensor performance.
- Manufactured and installed landing gear and avionics components using a combination of in-house prototyping and fabrication methods as well as rapid-prototyping services.
- Held multiple design reviews for parts and systems prior to fabrication or aircraft installation.
- Generated assembly drawings and work instructions for integration, managed inventory and installation runs.
- Created test campaign requirements and validated system performance and safety-of-flight criteria prior to first flight with the fully integrated assembly.

Universal Hydrogen – ***Engineering Intern*** ..... **September 2022 – March 2023**

- Supported the development, integration, and first flight of the world's largest hydrogen-electric fuel cell powered aircraft as part of the Powertrain and Flight Test team.
- Designed and developed test equipment and flight hardware, such as a single-unit pump system with integrated current and polarity protection to prime powertrain coolant lines.
- Developed 3D-printed throttle quadrant to create a tactile control interface for future powertrain testbeds.
- Fabricated and assembled both low and high-voltage wiring harnesses for testbed and experimental aircraft EWIS.
- Utilized power tools and machining to fabricate components for experimental aircraft hydrogen modules.
- Filmed and edited videos of technical development for outreach and promotional use.

UCR-Caltrans Noise Barrier Pollution Study – *UAV Researcher*..... March 2022 – September 2022

- Designed an autonomous UAV to measure atmospheric parameters such as windspeed, pressure, and temperature.
- Integrated pumping and sampling systems to enable airborne sampling of tracer gases to determine dispersion patterns downwind of the emission source at various altitudes and distances.
- Created MATLAB script to derive windspeeds calculated from aircraft velocity and ground track measurements.

UCR-Caltrans Highway Pollution Study – *Student Research Lead*..... June 2022 – September 2022

- Led a team of undergraduate students in a UCR-Caltrans joint study on the impact of highway noise barriers on airborne pollution dispersion downwind of the source.
- Planned and executed the deployment of over 40 sampling systems into arrays at multiple field locations.
- Utilized SF6 tracer gas, analyzed samples using gas chromatography, and validated data using MATLAB.

Projects and Leadership

Robotic Hand Prosthetic..... **March 2025 – Present**

- Developed a wearable prosthetic hand to assist individuals with limited wrist and finger mobility.
- Integrated both mechanical and electrical systems together using both affordable off-the-shelf components and custom 3D-printed structures.
- Conducted field testing to verify operation in real-world environments.
- Tested by individuals employed in the medical field and received positive feedback, such as potential use cases for stroke patient rehabilitation and neuromuscular degenerative diseases.

Computer Mouse Assistance Device..... **September 2023 – January 2024**

- Designed and developed a prosthetic device to assist individuals who do not have or are unable to use fingers other than their thumb.
- Utilized complex modeling within SolidWorks to design a single 3D-printed component with flexible compliant mechanisms, allowing manipulation of the mouse with minimal moving parts and assemblies.
- Tested and refined design through assisting an individual with a fractured hand.

President of Engineering, UCR Unmanned Aerial Systems..... **March 2020 – February 2022**

- Designed and tested VTOL-capable aircraft to accomplish a waypoint and payload delivery mission.
- Led all technical and business operations in UCR Unmanned Aerial Systems (UCR-UAS)
- Spearheaded the overhauling of all structures and operations within UCR-UAS to increase productivity.
- Coordinated the interdisciplinary development and integration of reliable and effective subsystems that comprise UCR-UAS' aircraft for the 2022 international AUVSI-SUAS competition.
- Managed UCR-UAS' recruiting campaign during the 2020-2021 academic year, resulting in a five-fold increase in membership despite being limited to online operations due to COVID-19.

Education

University of California, Los Angeles..... **September 2024 – June 2025**
Master of Science, Mechanical Engineering, GPA 3.75

University of California, Riverside..... **September 2019 – June 2024**
Bachelor of Science, Mechanical Engineering, GPA: 3.71
Dean's Honor List 2019 – 2020