Ruben Thiagarajah

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linkedin.com/in/ruben-thiagarajah | Engineering Portfolio

Education

Oaks Christian School *Class of 2028*
Westlake Village, California GPA: 4.00 | 4.61
Selected coursework: Aerospace Engineering, Introduction to Engineering, AP Computer Science A, AP Chemistry, AP Physics I, AP U.S. History, Honors Algebra II.

Additional study: USC Discover Engineering (Summer 2026); Moorpark College, Introduction to Sociology (Spring 2026, dual enrollment).

Engineering Projects

Cryogenic Vacuum Chamber *2025–Present*
Oaks Christian Institute of Engineering | CAD, fabrication & final electrical integration

- Created door CAD and helped fabricate and assemble the clear door through two iterations; supported feedthrough selection and installation, including finishing and labeling 64 wires at two feedthroughs.
- Assembled liquid-nitrogen plumbing, insulation, serviceable tubing connections, and two manual valves; wired four motor-current measurement boards for an ESP32.
- Now lead motor-power wiring integration and test dozens of wires linking external current sensors to motors inside the chamber during final integration.
- Test and connect wiring to the ESP32 and thermocouple acquisition and SD logging hardware; help sophomores with soldering and thermocouple installation. Chamber operation and lubricant-comparison tests remain ahead.

Omnirobot / OmniController *Summer–Fall 2026*
Personal mobile-robot project | Mechanical design, hardware integration & AI-assisted software

- Designed the chassis and motor-controller brackets in Fusion, assembled the robot, and integrated the hardware with control software developed using AI coding assistance.
- Demonstrated basic prompt-based autonomy through OmniController's GPT-6 mode, including moving toward objects and following people. Obstacle avoidance remains unproven.

USC Discover Engineering Projects *Summer 2026*

- Led bridge, body-measurement, and logic-circuit projects; independently completed Arduino, humanoid, and VEX IQ robots; built two single-stage rocket iterations.

Experience & Community Service

Aeronautics STEM Camp Counselor, Oaks Christian School *June 2025*

- Taught lift, thrust, drag, and control surfaces through glider and drone activities; coordinated with fellow counselors.

Rocket Engineering 101, Illinois Institute of Technology *Summer 2025*

- Built gliders, model rockets, and parachute egg-drop systems to explore lift, drag, and thrust.

Boys Team Charity *2022–Present*

- Help distribute food through Ruben Castro food-distribution activities and organize children's arts, games, and literacy activities through Many Mansions.

National Honor Society, Oaks Christian School *2025–Present*

- Participate in community service and coordinate beach-cleanup work with other volunteers.

Awards & Skills

Awards: College Board National Recognition Program School Recognition Award (2026); JDT VIII Badminton Tournament, first place (2024).

Design & electronics: Fusion 360, Onshape, AutoCAD, Autodesk CFD, 3D printing, ESP32, Arduino, wiring, instrumentation, and mechanical prototyping.

Software: Java, C++, AI-assisted development with Codex; websites, applications, and small-business AI tools.

Interests: Aerospace, robotics, boxing, badminton, and fitness.