Kevin Hao

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Education

Stanford University **Stanford, CA**
BS, Mechanical Engineering & Earth & Planetary Sciences (Double Major). *Graduating 2028*
SAT: 1590 (790R, 800M). GPA: 4.120 / 4.0.

Experience

Stanford Scheller Lab **Stanford, CA**
Undergraduate Researcher *March 2026 – June 2026*
- Build an end-to-end EMIT pipeline (preprocessing, MNF, PCA, Matched Filtering, Spectral Feature Fitting) to map serpentinization and listvenitization across the Samail Ophiolite as a natural analog for gigaton-scale carbon sequestration
- Diagnose confounds in unsupervised classification (albedo, shadow, water vapor); shift from full-spectrum K-means to spectral-library matching against USGS reference minerals
- Develop a dual-verification method (MF + SFF thresholding) with band-pass geometry (depth, FWHM, central band location) to resolve overlapping Mg-OH features near 2300 nm and isolate high-confidence serpentine and chlorite
- Identify serpentinite exposures underresolved by existing 1:100,000 geologic maps, establishing a reproducible pipeline for future EMIT scenes over ultramafic terrain

Stanford Sustainable Investment Group **Stanford, CA**
Principal *October 2025 – Present*
- Analyze business models, cost structures, and deployment pathways for early-stage climate and energy startups
- Synthesize technical and economic risks into concise investment diligence memos, including a deal memo on Solcoa Materials' molten-salt electrolysis approach to rare earth magnet recycling, with competitive landscape analysis spanning HyProMag, Noveon Magnetics, Cyclic Materials, and MP Materials

Stanford Australia and New Zealand Club **Stanford, CA**
Co-President *October 2025 – Present*
- Promote Australian and New Zealand culture through educational activities and cultural events for 100+ members
- Lead corporate fundraising strategy and outreaching and organize community-building events, collaborating with external ANZ-themed social and professional organizations, VCs, and founders

Oligo Space **Stanford, CA**
Mechanical Engineering and Manufacturing Intern *June 2026 – September 2026*
- Conduct Ansys Mechanical static structural, modal analysis, random vibration, and topology optimization simulations to support critical satellite launch loads
- Conduct acceptance testing and writeup of test procedures for avionics components
- Design and manufacture spacecraft brackets, structures, and mass models for avionics and power hardware using CAD/CAM
- Design and manufacture rolling assembly/integration GSE stand and custom coolant tray/splashguard to retrofit CNC mill, conducting hand calculations for moment balance and stress analysis

Stanford Student Robotics, Skyrunners Drone Club **Stanford, CA**
Co-Lead *October 2025 – Present*
- Led hands-on UAV builds for club members, teaching soldering, wiring, flight controller configuration, and PID tuning
- Fabricated carbon fibre components for UAV frames using CNC and CAM
- Assembled fixed-wing and multirotor UAVs, integrating flight controllers, ESCs, motors, and telemetry systems
- Designed and prototyped mechanical subsystems, such as ailerons and frames, for multiple UAVs
- Analyzed loads, aerodynamics and manufacturability; iterated designs through testing and cross-team integration

Various Hackathons **Stanford, CA**
Software Engineering and Team Member *October 2025 – Present*
- Won 2nd place in Physical AI/Robotics ($5,000), NVIDIA’s Choice (Received 3x Jetson AGX Thors, valued $15,000) and Best Use of Raspberry Pi at Google’s Gemma 4 Hardware Hackathon by building SwarmMind, a fault-tolerant multi-device AI system (Jetson AGX Thor, RTX 4070) with sub-second leader failover and mid-sentence LLM handoff, demoed via a robotic arm that performs live hazard detection and tool retrieval
- Won 3rd place in the Best Use of Bright Data category in Cal Hacks 12.0 by creating an AI agent that tracks price histories and refunds price differences
- Won 6th place finalist at Google’s Gemini Vibe Code Hackathon by implementing functions such as VLOOKUP in Google Sheets, improving Google’s Gemini agent

Skills & Interests

Technical: CAD (Fusion/SolidWorks), CAM, DFM, 3D printing, sensor integration, data logging, calibration
Geology: Plate tectonics reconstruction, sedimentology, geochronology
Programming and Data: Python (NumPy, pandas, PyTorch), Java, MATLAB, Paraview, ArcGIS, QGIS
Languages: English (Native), Mandarin (Native)
Interests: Hiking, sketching, rockhounding/collecting fossils (especially in Kioloa), speed typing