Eyan Documet

eyan.documet@protonmail.com | (310) 480-5366 | Berkeley, CA | eyandocumet.xyz

SUMMARY

Recent-grad BSME specializing in electromechanical and multi-physics systems. Experience across robotics, controls, and hardware prototyping with validated test and automation experience. Seeking a full-time role in electromechanical engineering and/or R&D.

EDUCATION

University of California, Berkeley, B.S. in Mechanical Engineering - 3.47 GPA — Dec 2025

EXPERIENCE

Engineering Intern, Lawrence Berkeley National Laboratory - Berkeley, CA — Jun 2025 - Dec 2025

- Developed prototype combined-function accelerator lattice piece meeting mechanical and magnetic constraints for next-gen synchrotrons, representing order-of-magnitude mass and power reduction vs existing systems
- Released a 100+ part electromechanical assembly into PLM and refurbished custom metrology fixtures to restore test capability for advanced materials characterization
- Replaced manual magnetic alignment with a real-time closed-loop controller achieving $\pm 0.5^\circ$ in-situ alignment of accelerator-strength permanent magnets
- Built MATLAB and Python tools to optimize permanent magnet layouts and reduce measured field errors

Reader, ME154: Thermophysics for Applications, UC Berkeley - Berkeley, CA — Aug 2025 - Dec 2025

- Graded assignments and proctored examinations for a class of 30+ graduate and undergraduate students

MESA Tutor, College of the Canyons - Valencia, CA — Apr 2022 - Jun 2023

- Delivered individualized group STEM tutoring and mentoring for over 50 students per semester

PROJECTS

Gyroid Optimization Experiment, Project Lead — Aug 2025 – Dec 2025

- Conducted a 3x3 full-factorial study with 3x replication (N=27) to determine whether a performance optimum existed in the design space of gyroid isovalue and unit-cell density
- Built automated analysis pipelines for calibration, statistical modeling, and performance trend identification
- Found a strong correlation ($R^2 = 0.94$) for a non-linear interaction between gyroid isovalue and unit cell density

Robotic Fire Suppression System, Electromechanical Lead — Feb 2025 – Jun 2025

- Designed and built prototype robot capable of extinguishing small fires without human input, achieving a 95-100% hit-rate on controlled small-fire tests at a ≤ 2 m range
- Developed low-level computer vision for heat sensing, runnable on local edge hardware, capable of near-zero latency for sensing, control, and delivery

UC Berkeley Solar Vehicle Team, Rear Suspension Team — Feb 2025 - Jun 2025

- Reduced rear suspension from an 8-part assembly to a monolithic structural component with mounting brackets, cutting part count 8:1, reducing mass, and simplifying manufacturing and assembly

SKILLS

- **Controls/Robotics:** Closed-loop control (PID, state-space), kinematics, Lagrangian Mechanics, motion planning, motor selection and calibration, actuator integration
- **Mechanical Design:** Creo Parametric, Windchill PLM, SolidWorks, OnShape, Autodesk Fusion, GD&T, tolerance analysis, DFMA, FEA, root-cause failure analysis (fishbone diagrams)
- **Embedded Systems/Software:** C/C++, Python, MATLAB/Simulink, microcontrollers (Arduino, ESP32), Git, Linux, KiCAD, finite-state machines
- **Fabrication/Testing:** 3D printing (FDM, SLA, MJF), machining, prototyping, oscilloscope/multimeter, metrology, experimental design, data analysis