Eyan Documet

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SUMMARY

Recent UC Berkeley Mechanical Engineering graduate with a focus on robotics, electromechanics, and multi-physics systems. Proven track record in high-level collaboration, manufacturing, hardware prototyping and engineering R&D. Seeking a full-time engineering role.

EDUCATION

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

- **Selected Coursework:** Simulation of Advanced Manufacturing Processes, Robotic Locomotion

EXPERIENCE

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

- Achieved an order-of-magnitude reduction in mass and power compared to conventional systems by independently developing a prototype accelerator lattice piece for next-gen synchrotrons.
- Streamlined production and reduced tolerance stack-up by identifying manufacturability concerns and revising drawings for a 100+ part assembly released into PLM.
- Attained $\pm 0.5°$ in-situ alignment of permanent magnets by replacing manual alignment processes with a custom real-time closed-loop controller.
- Minimized measured field errors through the development of automated MATLAB and Python optimization tools for permanent magnet layouts.
- Eliminated failure recurrence by conducting root-cause analyses on mechanical failures and implementing stakeholder-approved design revisions.

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

- Led and coordinated a team of three to conduct 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
- 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 3D-printed prototype robot capable of fully autonomous extinguishing of small fires, 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

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

- Led redesign of rear suspension, cutting part count 8:1 while reducing mass and simplifying manufacturing

SKILLS

- **Manufacturing/Fabrication:** Extensive experience with 3D printing (FDM, SLA, MJF); well-versed (3+ years) in CNC machining, CAM (Autodesk Fusion)
- **Controls/Robotics:** Proficient in closed-loop control (PID, state-space), kinematics, Lagrangian Mechanics, motion planning, motor selection and calibration, and actuator integration
- **Mechanical Design/Manufacturing:** Experienced in Creo Parametric, Windchill PLM, Autodesk Fusion, GD&T, tolerance analysis, DFMA, FEA, root-cause failure analysis (fishbone diagrams)
- **Embedded Systems/Software:** Highly experienced in Python, MATLAB/Simulink, microcontrollers (Arduino, ESP32), C/C++, Git, Linux, G-code