

Aadit Kannan

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Education

B.S. Mechanical Engineering, Minor in EECS · UC Berkeley · Junior Standing *Expected May 2028*

- Current: Discrete Math/Probability, Mechanical Behavior of Materials, Thermodynamics, Circuits/Devices
- Prior: Lin Alg/Diff Eq, Calc 1/2/3, Manufacturing/Design, Physics E&M + Mechanics, Python/Matlab, Chem

Current Projects ☞

Wolfrom Compound Planetary Actuator *May 2026 – Present*

- Designed 3-stage 50:1 compound Wolfrom gearbox for backdrivable robotic joints; maximized pre-reduction to minimize circulating power losses, targeting 80% efficiency and near-zero backlash via split-gear preloading
- Modeled full actuator in Onshape; simulating gear macro-geometry in KISSsoft (profile shifts, tip relief); manufacturing CNC aluminum version with wire-EDM rings and building dyno for torque/efficiency testing

Custom Toolbox Design & Manufacturing *Jan 2026 – May 2026*

- Designed toolbox assembly with production-style drawings using ASME Y14.5-2018 GD&T conventions; specified datums, tolerances, bend reliefs, and fastener clearances; fabricated and assembled final part

Experience

Accumulator Mechanical Engineer · Formula Electric Berkeley *Sep 2025 – Present*

- Designed and manufactured HV electronics attic enclosure and busbars for 588V accumulator; added waterproofing/high-dielectric insulation, reducing mass by 18%
- Routed busbars for 80A peak discharge; passed SES and ESF review on structure and electrical safety

Undergraduate Researcher · Ramesh Lab *Jan 2026 – Present*

- Designed nanosecond and microsecond pulse-generator PCBs for ferroelectric/RF characterization with GaN switching, coax I/O, source-measure biasing, and RP2040/Python triggering
- Completed 20+ supervised pulsed laser deposition (PLD) depositions of BiFeO₃ on semiconductor substrates, achieving sub-1nm roughness; characterized via X-ray diffraction and atomic force microscopy
- Built PLD tracking system with experiment logging, image capture, camera-assisted positioning, and data explorer to correlate growth parameters with XRD/AFM/PFM characterization

Deja Vu #13216 Hardware Lead & Zenith #20424 Captain · Robotics (FIRST) *Aug 2021 – Aug 2025*

- Designed 8 robots from first-principles in 500+ part CAD assemblies, used FEA to optimize aluminum chassis and reduce mass, won Design Award (x3)
- Mentored 30+ members in CAD and manufacturing, leading teams to regionals
- For outreach, raised over \$5000 across teams, launched an innovative parts exchange program, designed team websites

Student Leadership Committee · STEM Leadership Institute (SLI) *Aug 2019 – Aug 2025*

- Trained 120 middle school STEM students on Arduino; designed 3 mock competitions, mentored 2 FTC and 5 FLL teams
- 6 year selective program: 1800+ hours of STEM sessions, coursework, and hands-on fabrication (laser, CNC, 3D printing)

Leitmotif · YCombinator x Google DeepMind Hackathon Winner *Mar 2026*

- Built real-time assistive audio system using Gemini vision + DeepMind Lyria, generating musical motifs that encode people and scene context for visually impaired users
- Implemented Node.js/TypeScript backend with PostgreSQL (pgvector) + Supabase for vision inference, motif retrieval, and audio generation; won hackathon, earning \$5k in GCP credits

Founder · Pear Volunteering *Aug 2023 – Aug 2025*

- Built app/website connecting 2000+ students with volunteer opportunities across 20+ organizers and school admin; implemented webhook/CMS system for encrypted communication

Mechanical Engineering Intern · Posha (Formerly Nymble) *Jun 2023 – Aug 2023*

- Repaired 20+ customer cooking robots by troubleshooting electrical/mechanical failures, debugging subsystems, and validating repairs

Skills

Engineering & Design: SolidWorks/PDM, Onshape, FEA (ANSYS), KISSsoft, DFM/DFA, CAD/CAM/CAE, GD&T, Hand Calcs, MATLAB/Simulink, KiCAD, LTSpice, Machining (mill, lathe, waterjet, laser cutter), TIG welding, 3D printing (FDM/SLA)

Software: Python, Java, JS/TS, SQL, HTML/CSS, React, Node, Tailwind, Git

Libraries: Pandas, NumPy, Matplotlib, OpenCV, TensorFlow, PyTorch