Joe Domke

Mechanical Engineer

Contact

530-763-2727
joedomke.com
jdomke@berkeley.edu
linkedin.com/in/jdomke

Education

UC Berkeley - May 2026

- Bachelor of Science: Mechanical Engineering

Shasta College - 2023

- Engineering, A.A.
- Quantitative Reasoning, A.A.
- Mathematics, A.S.T.

About Me

A creative and innovative professional with a big-picture viewpoint to effectively solve complex problems and build robust systems. Demonstrated ability to enhance organizations through operations, manufacturing, and design.

Career Contributions and Accomplishments

- **aNewsCafe.com** - Created and maintained an award-winning news website that reported important events and represented voices in the community
- **Focused Mechanical Engineering Project Work** around prototyping and iterative design to create novel concepts and products that enhance systems and solved engineering problems
- **STAR (Space Technologies and Rocketry)** - Implemented pivotal procedures that improved the build quality and accuracy of rockets and manufacturing processes
- **Shasta College** - Considered a highly sought-after student tutor for effectively teaching writing, math, and physics

Skills

Mechanical Design
Prototyping
Fabrication
Machining
Electronics
Programming
Web/Graphic Design
Project Management
Problem Solving/Troubleshooting
Critical Thinking/Detail Oriented
Reliable/Dependable
Leadership
Collaboration
Interpersonal Communication
Cross-functional Teamwork
High-Stress Environments
Adaptable
Technical Communication

Experience

Professional background includes twelve years of design, technical, and operational work, brand management, and two years of assisting students in their development through instructional guidance and support. Paused career in 2020 to pursue a Mechanical Engineering Degree and develop technical skills as well as establish industry standards through organized processing and creative prototyping.

Shasta College Tutoring and Learning Center - Redding, CA

Math, Physics, and Writing Tutor | August 2021 - May 2023

- Tutored math, science, and writing, and offered computer lab aid
- Designed and conducted writing workshops to assist students with refining their writing and organization skills

aNewsCafe.com - Redding, CA

Co-Founder & Director of Technical Operations | November 2007 - July 2020

- Influenced business operations by partnering with advertisers, executing a functional website, and providing solutions to various technical issues
- Oversaw article and advertisement publication and coordinated content creation for news website
- Received an average of 100,000 monthly views, several awards, and was featured in multiple national news outlets
- Designed WordPress sites with user-friendly interfaces, graphics, and typography for a unified brand

Technical Skills

Mechanical Design
- SolidWorks
- Fusion 360
- OnShape
- FEA
- Jigs and Fixtures

Prototyping
- 3D Printing
- CNC Routing
- Laser Cutting

Fabrication
- Metalworking
- Welding
- Composites
- Carpentry
- Woodworking
- Masonry
- Electrical
- Plumbing
- Injection Molding

Machining
- Manual Machining
- CNC Machining
- Waterjet Cutting

Electronics
- Microcontrollers
- Protoboards
- PCB Design (KiCad)
- Motor Control
- Sensors
- Programming
- C++
- Python
- MATLAB
- Java

Web/Graphic Design
- Adobe Photoshop
- Adobe Illustrator
- Adobe InDesign
- Inkscape
- GIMP
- WordPress
- HTML
- PHP
- CSS
- Content Management
- Copy Editing

Engineering Project Experience

Terralegs
Mechatronic Design Class | Aug 2025 – Dec 2025
- Designed single-actuator cam-carriage mechanism controlling four independent drone landing legs simultaneously, enabling passive terrain adaptation up to ±7.25 cm variation
- Developed event-driven embedded control system on ESP32 with LIDAR-based ground detection, velocity PID control, homing routine, and state machine logic to autonomously execute deployment, settling, and ratchet-locking sequence with zero holding power

ISAM 2025 Conference Awards
Designer and Craftsman | July 2025
- Commissioned to design and fabricate custom awards through iterative client presentations, material selection, and full-scale mockup development for International Symposium on Academic Makerspaces
- Executed precision woodworking and metal fabrication combining locally sourced California redwood with laser-cut brushed stainless steel with high-grit finishing to deliver commissioned project on timeline and budget

The Flaptone and BLE Rover
Prototyping and Fabrication Class | June 2025 – July 2025
- Designed hand-powered musical instrument using gear train mechanics and frequency-based tooth count to generate C major scale tones, iterating prototypes to validate drive system, bearing retention, and key action
- Engineered dual-wheeled rover with BLE control, integrated motors and battery packs within 3D-printed hubs using counterweighted components

Kitchen Flow Control
Electronics Class | January 2025 – May 2025
- Developed distributed sensor network using ESP32 microcontrollers communicating over ESP-NOW protocol to monitor high-traffic doorways and dish return stations in commercial kitchen environment
- Implemented dual-tone ultrasonic door alarm system with 2-meter detection range and near-instantaneous response, using distinguishable audio alerts for bidirectional awareness at blind corners

Back In Action
Design for the Human Body Class| August 2024 – December 2024
- Designed and built IMU-based posture monitoring system using ESP32, developing custom motor driver circuit, resolving hardware integration challenges, and programming feedback logic for haptic correction
- Executed complete product development cycle from Arduino proof-of-concept through final prototype assembly, including schematic design, protoboard soldering, 3D printed enclosure design, and iterative testing to validate wearable comfort and electronic functionality

Space Technologies and Rocketry (STAR) at UC Berkeley
Airframe Deputy | Sep 2023 – May 2025
- Led rocket development as Airframe Deputy Lead, managing project timelines, task assignments, budgets, and coordinating cross-functional designs using complex CAD assemblies
- Developed manufacturing processes across multiple rocket projects including modified tile saw for precision fiberglass cutting, laser-cut fillet tools, 3D-printed assembly jigs, and composite reinforcement techniques for IREC competition