

Kevin Medici

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Summary

Design and microfabrication engineer with an M.S. in Bioengineering. Hands-on experience in cleanroom microfabrication and photolithography, SolidWorks and finite element analysis, process engineering, and equipment maintenance. Currently a design engineer at Grapheton and founder and CEO of Fab Path L.L.C. Engineer in Training (California).

Education

San Diego State University 2026

M.S. Bioengineering. Thesis: Carbon-Based Interdigitated Supercapacitor

- Fabricated interdigitated glassy-carbon microsupercapacitors in a cleanroom (spin coating, photolithography, mask alignment, thermal processing, metal deposition) and characterized them with Hirox microscopy and electrochemical testing; 5 μm electrodes performed best (25.55 μW peak power, 191.45 μJ stored energy).

University of California, Davis 2022

B.S. Biological Systems Engineering

Experience

Design Engineer September 2026 – Present

Grapheton

- Design the process that keeps photolithography smooth and repeatable on carbon-based materials (details covered by a non-disclosure agreement).

Founder & CEO 2026 – Present

Fab Path L.L.C., California (fab-path.com)

- Founded and registered Fab Path L.L.C. in California to publish free, interactive education on semiconductors and microfabrication; run the business side, including the fab-path.com domain and the privacy, terms, and sources pages.
- Designed, wrote, and built the platform: 7 courses and 222 lessons, games, interactive simulators, 3D scenes, and Virtual Fab Labs where learners draw photomask layouts and test simulated devices.
- Built the software end to end: static HTML/CSS/JavaScript front end, Supabase accounts with cross-device progress sync, an iOS app, and security hardening.

Graduate Researcher, Microfabrication M.S. Bioengineering, 2026

San Diego State University

- Developed and optimized cleanroom processes (spin coating, photolithography, mask alignment, thermal processing, metal deposition) to fabricate interdigitated glassy-carbon microsupercapacitors.
- Characterized devices with Hirox microscopy, potentiostat testing, and electrochemical analysis; combined experiments with finite-element modeling to compare electrode thicknesses and architectures.

Equipment Manager, NanoFabrication Lab June 2025 – June 2026

San Diego State University

- Maintained the lab's photolithography equipment, performing preventive maintenance and cleaning.
- Kept the maintenance and cleaning records up to date, and troubleshooted and repaired equipment whenever it needed fixing.

Teaching Assistant, ME 685 Microelectromechanical Systems (MEMS) January 2026 – May 2026

San Diego State University (Dr. Samuel Kassegne)

- Graded homework and held two hours of office hours every week.
- Taught students to use CoventorWare, the MEMS design and simulation CAD software.
- Gave cleanroom tours and demonstrated the photolithography fabrication process to students.

Process Engineer April 2022 – July 2024

California Safe Soils

- Developed Cal-Plex, a liquid calcium fertilizer at roughly 5% calcium, and optimized manufacturing processes to improve product quality and repeatability.
- Performed mass/energy balances and data analysis for process improvement, and automated Excel tools for calculations, data collection, and production control.
- Troubleshooted equipment and interpreted wiring diagrams to support uptime; ran preventive maintenance and managed assets, spare parts, and inventory.

Engineering Projects

Modular Prosthetic Ankle-Foot (BMES), Project Manager

June 2025 – June 2026

San Diego State University

- Led SolidWorks CAD development and iterative refinement of a modular prosthetic ankle-foot for K2 ambulation; used static FEA with gait-phase loading to evaluate structural performance and optimize foot rotation; evaluated materials on mechanical performance, manufacturability, and cost.

Humeral Intramedullary Rod (ME 683)

2024

San Diego State University

- Designed an orthopedic intramedullary fixation device in SolidWorks (Ti-6Al-4V) and evaluated it with FEA under bending, compression, and torsional loading; applied GD&T and ASTM F1264.

PTCA Catheter Design

San Diego State University

- Developed engineering specifications for a multi-component PTCA catheter by evaluating geometry and materials to balance pushability, torquability, and flexibility.

Extreme Cooling for NVIDIA Blackwell GB200 (ME 610)

San Diego State University

- Built a COMSOL thermal-fluid model of immersion cooling for high-density GB200 server systems; the model removed heat at an average of 28.16 kW over a four-hour period.

BioBoba Mycoprotein Production System (EBS 170C Senior Design)

2021

UC Davis

- Designed a 150-gallon pilot-scale mycoprotein production system covering fermentation, separation, pasteurization, thermal modeling, equipment selection, plant layout, and economic analysis, using SuperPro Designer and SolidWorks.

R2-D2 SolidWorks Assembly (ENG 004)

2021

UC Davis

- Developed a near life-size R2-D2 CAD assembly using multi-part modeling, advanced mates, reference geometry, detailed subassemblies, and technical drawings.

Solar Food Dehydrator

2019

UC Davis

- Designed, fabricated, and tested a low-cost renewable-energy food dehydrator, including CAD, concept selection, and statistical analysis; banana mass loss was higher on woven mesh than wire cloth (51.3% vs 39.7%) at a 99% confidence interval.

Technical Skills

Design & Simulation: SolidWorks, 3D CAD, FEA, COMSOL, CoventorWare, AutoCAD, GD&T, DFMA, Engineering Drawings

Microfabrication & Characterization: Cleanroom, Photolithography, Spin Coating, Mask Alignment, Metal Deposition, Tube Furnace, Thermal Processing, Potentiostat, Hirox Microscopy, SEM, Profilometry, Electrochemical Characterization, Equipment Maintenance

Process & Manufacturing: Process Development, Root Cause Analysis, Continuous Improvement, Mass/Energy Balances, P&IDs, Preventive Maintenance, GMP, DCS, QC

Programming & Tools: Python, MATLAB, JavaScript, HTML/CSS, Supabase, Excel Automation, SharePoint, ERP Systems

Certifications

- Engineer in Training (EIT), California, April 2023: passed the Fundamentals of Engineering examination
- Aseptic Sampling Training Certificate, Certified Group, April 2023

Leadership, Service & Recognition

- Philanthropy Chairman, Phi Delta Theta, 2020–2021: planned fundraising events, tracked ticket sales and donations, and helped raise more than \$5,000 for the Live Like Lou Foundation.
- Food Recovery Network, UC Davis, 2021: collected surplus food from the Farmers Market and delivered it for community distribution.
- TOPSoccer Volunteer, 2017: supported inclusive soccer activities for children and adults with disabilities.
- NBC Inspirational Student of the Month, March 2017: recognized for leadership and 100+ volunteer hours in six months.
- Fraternity Community Service Award, Phi Delta Theta, February 2018; Outstanding Track Athlete, Vista High School, June 2017.