

KEVIN O'DONNELL

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EDUCATION

Columbia University

NYC, NY | Sep 2022 - Dec 2024

Master of Science in Biomedical Engineering. Concentration in Robotics and Control. GPA: 3.5/4.0

Relevant Coursework

- Biostatistics, Robotic Studio, Mechatronics, Biomed Innovation, Tissue Engineering, Control Theory.

University of California, Los Angeles (UCLA) Extension Los Angeles, CA | Expected Dec 2025

Certificate in Medical Device Engineering

Relevant Coursework

- Med Dev Manufacturing, Biomaterials/Compatibility, Quality Systems, Regulatory Affairs, Six Sigma.

University of California, Los Angeles (UCLA)

Los Angeles, CA | Oct 2018 - Mar 2022

Bachelor of Science in Honors Integrative Biology and Physiology GPA: 3.5/4.0, Upper Div 3.84/4.0

- Awards: Department Honors, Alumni Scholarship National Finalist, Achievement Scholarship.

EXPERIENCE

Shape Memory Medical Inc.

San Jose, CA

Engineering Intern

Jun 2023 - Aug 2023

- R&D: Designed patient-specific cardiac (AAA) CAD models, 3D-printed prototypes, and integrated with a pulsatile flow system for pre-clinical testing; supported device delivery and data collection.
- Manufacturing: Upgraded Crimping Station circuits, enhancing usability and operational efficiency.
- Quality: Optimized laser welding parameters via Taguchi DOE; achieved 367% tensile strength boost.

Samuel Sia Laboratory - Microfluidics

NYC, NY

Graduate Research

Aug 2022 - Dec 2022

- Executed PCR testing and characterized microfluidic pump designs to optimize automated wastewater SARS-CoV-2 surveillance, streamlining sample processing and accelerating early detection.

Colwell Laboratory of Circadian and Sleep Medicine

Los Angeles, CA

Undergraduate Research Assistant

Jul 2019 - Jun 2022

- Led 3-year research on sex- and genotype-dependent neurodevelopment in Bloc-1-deficient Pallid mice. Conducted behavioral experiments, statistical analysis, and presented findings at UCLA (2022).

Silk Road Medical Inc. (Acquired by Boston Scientific)

Minneapolis, MN

R&D Engineer Intern

Jun 2021 - Sep 2021

- Designed and implemented a microcontroller-based carotid artery test-bed to validate catheter pressure and flow performance; also served as a procedural model for clinician feedback.
- Automated FDA MAUDE root-cause and market analyses, guiding strategic product development.

UCLA Bruin Young Tech Professionals

Los Angeles, CA

HealthTech - Product and Research Development

Mar 2021 - Jun 2021

- Leveraged Google Design Thinking to create a Minimum Viable Product: a full-stack, API-based medication reminder system for hospital Electronic Health Record (EHR) integration.

Projects (<https://www.kevinod.com/Projects>)

- AI deep learning models for malaria cell detection (object detection), breast cancer survival-based treatment using genetic profiles, and cardiovascular risk prediction with subgroup-aware modeling.
- Autonomous bipedal robot using CAD, 3D printing, embedded mechatronics, Python, and simulation.
- Robotic pull-wire catheter system with Bluetooth control and threaded Python for steerable navigation.
- Endotracheal Intubation Emergency Model with Functional, Verification, and Validation requirements.
- Columbia BiomedX Retinal Microneedle Commercialization Plan (business & technological viability).

SKILLS

Tech: 3D Printing, Design Control, Mechatronics, Robotics, Laser Cutting, PCR, Experimental Design.

Software: CAD (SOLIDWORKS), Python, AI/ML, Data Analysis & Stats, MATLAB, Microsoft Excel.