KEVIN O'DONNELL

Los Angeles, CA | kao2160@columbia.edu | kevinod.com/Projects

EDUCATION

Columbia University   NY, NY | Sep 2022 - Dec 2024
Master of Science in Biomedical Engineering. Concentration in Robotics and Control.   GPA: 3.5/4.0
<u>Relevant Coursework</u>
- 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
<u>Relevant Coursework</u>
- 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
- <u>Awards</u>: 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 aneurysm 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   NY, 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 (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.
- 5-DOF robotic arm utilizing ROS 2 framework, MoveIt 2 path planning, and Gazebo simulation.
- Robotic pull-wire catheter A* Planning & Control algorithm for autonomous vascular navigation.
- Autonomous bipedal robot built from CAD, 3D printing, mechatronics, Python, and simulation.
- Endotracheal Intubation Emergency Model with Functional, Verification, and Validation requirements.

SKILLS

Tech: 3D Printing, Design Control, Mechatronics, Robotics, Laser Cutting, PCR, Experimental Design.
Software: CAD (SolidWorks), Python, AI/ML, ROS 2, Gazebo, MoveIt 2, Data Analysis, Matlab, Excel.