Derrick Lin

Curriculum Vitae

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Education

Doctor of Medicine 2028
David Geffen School of Medicine at UCLA

Bachelor of Science in Computer Science and Neurobiology 2023
University of California, Irvine

Honors: Phi Beta Kappa · Magna Cum Laude · Dean's Honor List (12 Quarters)

Research Interest

With a unique background spanning computer science, neurobiology, and clinical medicine, I am passionate about advancing the frontiers of **brain-computer interfaces (BCIs)**, **neural engineering**, and **bioelectronic medicine**. My research has focused on building **real-time neural signal processing systems**, developing **custom electrophysiology hardware** for neural recording and stimulation, and designing **AI-integrated neuroprosthetic technologies**. I am particularly interested in applying these tools to **robotic surgery**, **precision neuromodulation**, and **restorative neural interfaces**. By combining translational engineering with patient-centered design, I aim to develop scalable, clinically impactful technologies that bridge neuroscience and healthcare innovation.

Research Positions

Research Specialist July 2023 – July 2024
Brain Computer Interface Lab, UC Irvine *Irvine, CA*
Faculty Mentor: An Do MD, Zoran Nenadic D.Sc.

- Designed and assembled custom PCBs using Fusion 360 for a low-cost (90% price reduction) 60-channel neural culture recording/stimulation headstage to facilitate behavioral programming on stem cell-derived neurons.
- Developed a .NET-based UI for real-time visualization of neural spike signals (15 kHz), integrating bidirectional electrophysiology chips (Intan RHS series) via SPI communication with a Teensy 4.1 microcontroller.
- Engineered custom PCBs for brain-computer interfaces (BCIs) and peripheral circuits to enable neural control of a walking exoskeleton.
- Collaborated with clinicians and engineers on thermal testing for an FDA IDE application, ensuring stimulation safety of an invasive brain-computer interface.

Undergraduate Researcher November 2020 – July 2023
Brain Computer Interface Lab, UC Irvine *Irvine, CA*
Faculty Mentor: An Do MD

- Differentiated human-induced pluripotent stem cells into neuronal-lineage cells and evaluated their maturity using immunohistochemistry.
- Developed an automated image processing pipeline in MATLAB to quantify cellular protein expression across ≈100,000 cells.

- Optimized neuronal cell proliferation and co-cultured astrocytes and neurons on microelectrode arrays (MEAs) to enhance electrophysiological studies.

Startup Activities

Co-Founder & CTO March 2025 – Present
Transcend Medical *Los Angeles, CA*

- Leading development of a mobile platform connecting patients with vetted, gender-affirming care providers across the U.S.
- Designed and implemented core app features including real-time messaging, appointment scheduling, provider search, and review systems.
- Coordinated cross-functional collaboration between engineering, clinical advisors, and community stakeholders.
- Launched beta testing at UCLA to collect user feedback and iterate for improved usability and accessibility.
- Built infrastructure to support provider onboarding, verification, and customizable profiles, fostering trust and transparency.

Professional Experience

Medical Assistant September 2021 – July 2024
Irvine Orthopedic *Irvine, CA*
Supervisor: Darius Lin MD

- Provided patient care in a fast-paced orthopedic clinic, including triage, vital sign assessment, and clinical assistance.
- Managed EHR documentation with a 10% reduction in errors compared to the clinic average, enhancing record accuracy.
- Assisted patients with their needs, contributing to a 98% positive patient satisfaction rating.
- Helped implement the clinic's quality assurance program to ensure HIPAA, CLIA, and OSHA compliance.

Mentoring Experience

Online Tutor January 2021 – August 2022
Berkeley^2 Academy *Austin, TX*

- Designed and delivered structured lessons to reinforce weak subject areas and enhance students' strengths.
- Provided guidance on effective study techniques, note-taking strategies, and test preparation.
- Conducted remote tutoring sessions via pre-recorded and live video lessons to facilitate interactive learning.

Volunteer Experience & Causes

Co-Founder November 2022 – Present
Teddy Bear Hospital USA *Irvine, CA*

- Founded a federally recognized non-profit organization in collaboration with chapters in the UK, Germany, France, and Australia.
- Alleviated clinical anxiety among children and parents while promoting medical literacy through interactive pretend play with teddy bears and medical props.
- Expanded the organization to seven university chapters, including UCI, UCI SOM, UCLA, ASU, Georgia Tech, UC Berkeley, and the University of Houston.

Honors, Awards & Memberships

Young Professional Paper Competition First Place, 46th IEEE EMBC Conference	July 2024
Phi Beta Kappa	June 2023
UROP Fellow ($1,000), University of California, Irvine	December 2022
UROP Fellow ($3,000), University of California, Irvine	June 2022
Supporting Undergraduate of Graduate SURP Fellow ($7,500)	June 2022
Summer Undergraduate Research Program (SURF) Fellow ($1,380)	June 2021
Undergraduate Research Opportunity Program (UROP) Fellow ($380)	June 2021

Publications

1. E Jolkovsky, MN Miller, W McClain, S Rabinovich, AD Barkhordarzadeh, **D Lin**, S Piva, A Lerner, GC Slack. "The Anatomical Breast Burden (ABB) Model: A Schnur Scale Alternative for Identifying Need for Therapeutic Reduction Mammaplasty" *Aesthetic Surgery Journal Open Forum*, ojaf168. 12/18/2025.
2. MN Miller, **D Lin**, S Rabinovich, G Airth, S Rainsbury-Silva, R Canfield, S Fadich, K Shariati, JP Bradley, JC Lee. "Defining Outcomes in Facial Gender-Affirming Surgery: A Systematic Review to Inform Core Outcome Set Development" *Preprints*. 12/17/2025.
3. S Thaploo, **D Lin**, P Wang, A Appajodu, P Thurgam, A Baig, L Vargas, Y Li, G Brewer, Z Nenadic, AH Do. "Long-Term Maintenance of Human Stem Cell-derived Neural Networks for Electrophysiology Studies" 12/08/2025.
4. **D Lin**, T Tran, S Thaploo, JGE Matias, K Pixley, Z Nenadic, AH Do. "Perception of Brain-Computer Interface Implantation Surgery for Motor, Sensory, and Autonomic Restoration in Spinal Cord Injury and Stroke" *arXiv preprint*, 2507.11572. 07/15/2025.
5. J Lim, PT Wang, WJ Sohn, **D Lin**, S Thaploo, L Bashford, D Bjanes, A Nguyen, H Gong, M Armacost, SJ Shaw, S Kellis, B Lee, D Lee, P Heydari, RA Andersen, Z Nenadic, CY Liu, AH Do. "Real-Time Brain-Computer Interface Control of Walking Exoskeleton with Bilateral Sensory Feedback" *arXiv preprint*, 2505.00219. 04/30/2025.
6. J Lim, PT Wang, WJ Sohn, C Serrano-Amenos, M Ibrahim, **D Lin**, S Thaploo, SJ Shaw, M Armacost, H Gong, B Lee, D Lee, RA Andersen, P Heydari, CY Liu, Z Nenadic, AH Do. "Early feasibility of an embedded bi-directional brain-computer interface for ambulation" *2024 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, pp. 1–5. 07/15/2024.

7. S Thaploo, **D Lin**, GJ Brewer, AH Do, Z Nenadic. "Pruning functional connections in human induced pluripotent stem cell derived neural networks" *2024 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, pp. 1–5. 07/15/2024.

8. S Thaploo, **D Lin**, Y Li, M Vu, G Brewer, Z Nenadic, AH Do. "A simplified method for long-term maintenance of human induced pluripotent stem-cell derived neural networks" *2024 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, pp. 1–4. 07/15/2024.

9. SS Chu, HA Nguyen, **D Lin**, M Bhatti, CE Jones-Tinsley, AH Do, RD Frostig, Z Nenadic, X Xu, MM Lim, H Cao. "Development of highly sensitive, flexible dual L-glutamate and GABA microsensors for in vivo brain sensing" *Biosensors and Bioelectronics*, 222:114941. 02/15/2023.

10. J Lim, **D Lin**, WJ Sohn, CM McCrimmon, PT Wang, Z Nenadic, AH Do. "BCI-based Neuroprostheses and physiotherapies for stroke motor rehabilitation" *Neurorehabilitation technology*, 509–524. 11/16/2022.

Manuscripts in Preparation

1. MN Miller, E Jolkovsky, **D Lin**, S Rabinovich, AD Barkhordarzadeh, T Alnaseri, GC Slack. "Current Predictive Formulas for Reduction Mammaplasty Ignore What Matters Most: The Patient's Vision" Manuscript in preparation.

2. E Jolkovsky, MN Miller, **D Lin**, S Rabinovich, AD Barkhordarzadeh, S Piva, T Alnaseri, GC Slack. "The Anatomical Macromastia Index (AMI): A Body-Habitus–Neutral Tool to Identify Surgical Treatment Candidates" Manuscript in preparation.

3. MN Miller, E Jolkovsky, AD Barkhordarzadeh, S Rabinovich, **D Lin**, T Alnaseri, GC Slack. "Estimating Mastectomy Weight from Standard Breast Measurements, BMI, Sister Bra Size: A Simple Clinical Formula" Manuscript in preparation.

Presentations

1. M Miller, **D Lin**, K Shariati, S Rabinovich, G Airth, R Canfield, S Rainsbury, S Fadich, JP Bradley, J Lee. *"Defining Outcomes in Facial Gender-Affirming Surgery: A Systematic Review to Inform Core Outcome Set Development"* Oral Presentation. International Society of Craniofacial Surgery 2025. Shanghai, China. 2025.

2. **D Lin**, M Vu. *"Long-term hiPSC-derived cultured neural network for behavioral programming"* Oral Powerpoint Presentation. UCI UROP Symposium. UC Irvine, Irvine, CA, USA. 2023.

3. **D Lin**. *"The Longevity of Co-Culturing Astrocytes and Neurons on a Microelectrode Array"* Oral Powerpoint Presentation. UCI UROP Symposium. UC Irvine, Irvine, CA, USA. 2022.