

CEDAR ROSE D. LEACH

cdleach@usc.edu | (310) 938-7235 | www.linkedin.com/in/cedar-rose-leach | <https://cedarrose.vercel.app/>

EDUCATION

University of Southern California B.S. in Electrical and Computer Engineering GPA: 3.96	Class of 2027 Los Angeles, CA
Palos Verdes Peninsula High School Valedictorian	June 2023 Rolling Hills Estates, CA

EXPERIENCE & INVOLVEMENT

USC Sigma Eta Pi, Member	September 2024-Current
<ul style="list-style-type: none">Involved in a startup accelerator, traversing a product through customer & problem discovery, product development/ideation, market/growth strategies, and a final showcaseCo-founder of Memoir, an audio-based photo library aiding visually impaired in interacting with their memories and recollection	

Center for Undergraduate Research in Viterbi Engineering (CURVE) Fellowship, Research Fellow Biomedical Microsystems Lab	June 2024-Current
<ul style="list-style-type: none">Designing, fabricating, and characterizing a hybrid silicon-polymer neural recording probe aimed at integrating the flexibility of polymer-based neural interfaces and the high electrode density of silicon-based neural interfacesUtilizing femtosecond laser ablation to pattern coil structure and depositing parylene as neural probe shaft and coil insulationEmbedding integrated circuit neural recording chips to enable high spatial resolution, chronic neural recording through inductive coupling.	

The Khan Lab	January 2024-May 2024
<ul style="list-style-type: none">Developed firmware, tested, and designed printed circuit board for the analog front end of an extended-gate transistor-based electrochemical sensing systemAcquired electroencephalography signals with Arduino IDE interfaced with ADS1299 analog front ends & processed physiochemical and physiological signals gathered via experimental dataModeled components of wearable sensors through computer-aided design	

USC Makers, Member	September 2023-Current
<ul style="list-style-type: none">Designing and testing an EEG-controlled drone through a self-engineered brain-controlled interfaceCreated SmartTender, an autonomous assembly line robot that dispenses and prepares drinks depending on user input with movement mechanisms modeled after 3D printer linear rails	

California Dreams DOD Microelectronics Commons Scholars, Intern	June 2024-July 2024
<ul style="list-style-type: none">Trained in semiconductor nanofabrication processes and safe chemical handling in a cleanroomPracticed machine operation and fabrication techniques (photolithography, etching, deposition, wafer cleaning & handling)	

FIRST Robotics Team 2637, Team Member	October 2019-June 2023
<ul style="list-style-type: none">Designed robot features through Autodesk Inventor; programmed robot's turret in JavaEstablished an inaugural all-girls robotics competition team for elementary school studentsMentored in strategizing, designing, building, and programming an original, autonomous robotEarned the Core Values Award recognizing FIRST philosophies of Gracious Professionalism and Coopertition	

Boeing Company, Intern	June 2022-August 2022
<ul style="list-style-type: none">Configured the field-programmable gate array (FPGA), Versal VCK 190Studied GPS satellites, flight mission, mission control center, space environmentAwarded winner of the LINC Innovation Challenge; developed concept for Boeing's campus navigation to optimize collaboration efficiency; recognized by President and Executive Director of Human Resources for Boeing Commercial Satellite Systems	

PUBLICATIONS

<i>Printed wearable sweat rate sensor for continuous in-situ perspiration measurement</i> , accepted for publication in 2024 in <i>Device</i> , a Cell Press journal
<ul style="list-style-type: none">Mohammad Shafiqul Islam, Sangwon Cha, Md Farhad Hassan, Wenxin Cai, Tahsin Sejat Saniat, Cedar Rose Leach, Yasser Khan

SKILLS

Technical: Verilog, Java, C++, React Native, CAD, Arduino, Soldering, Laser cutting, Cleanroom skills, PCB design, Front-end dev.
Software: MATLAB, Fusion 360, EAGLE, Vitis, Vivado, QuestaSim, Procreate, ImageJ, Figma
Certifications: IEEE Introduction to Metrology, IEEE Introduction to Etching, IEEE Fundamentals of Cleanroom Safety, IEEE Fundamentals of Cleanroom Protocols, CPR, First Aid, Open-Water Rescue
Creative: Graphic design, Woodworking, Resin pouring, Sewing, Ceramics, Product Design & Development