

Seongjae Lee

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EDUCATION

POSTECH, Pohang University of Science and Technology <i>Ph.D. student, major in Medical Science and Engineering</i>	Feb 2024– Pohang, RoK
POSTECH, Pohang University of Science and Technology <i>Bachelor's Degree (Summa Cum Laude, GPA 4.03/4.3), Convergence IT Engineering</i>	Feb 2020–Feb 2024 Pohang, RoK
École Polytechnique Fédérale de Lausanne (EPFL) <i>Exchange Program, Life Sciences (SV)</i>	Jan 2023–Jul 2023 Lausanne, CH

PUBLICATIONS

Unidirectional dynamic stiffness modulation enables easily insertable and conformally attachable spinal bioelectronic device <i>npj Flexible Electronics</i>	under revision
Spinal Cord Neural Signals as Digital Biomarkers for Chronic Pain Detection in Contusive Spinal Cord Injury of Rats <i>Society for Neuroscience 2025 (Poster Presentation)</i>	Nov 2025
Automated Arrhythmia Classification System: Proof-of-Concept With Lightweight Model on an Ultra-Edge Device <i>IEEE Access</i>	Oct 2024
Shuffled ECA-Net for stress detection from multimodal wearable sensor data <i>Computers in Biology and Medicine</i>	Oct 2024

WORK EXPERIENCE

High School External Instructor <i>Pohang Youngshin High School</i> Teaching <i>Advanced Life Science</i> and <i>Life Science Laboratory</i> as part of an advanced science class program.	Mar 2024– Pohang, RoK
Teaching Assistant <i>[EGN4932] Global Design Thinking in Engineering, University of Florida</i> Assisted in teaching the course under the guidance of Prof. Andrea Goncher and Gloria Kim.	Jun 2024–Jul 2024 Pohang, RoK

VOLUNTEER EXPERIENCE

President, POSTECH Graduate Student Association <i>POSTECH</i>	Mar 2026–Feb 2027 Pohang, RoK
Student Representative, POSTECH CiTE Department <i>POSTECH</i>	Jan 2022–Dec 2022 Pohang, RoK
Residential College Advisor <i>POSTECH Residential College</i>	Jan 2022–Dec 2022 Pohang, RoK

AWARDS AND HONORS

Outstanding Poster Award <i>KOSOMBE 2025 Fall Conference</i> Recognized for the poster “Spinal Cord Neural Signals as Digital Biomarkers for Chronic Pain Detection in Contusive Spinal Cord Injury of Rats.”	Nov 2025
Outstanding Poster Award <i>KOSOMBE 2025 Fall Conference</i> Recognized for the poster “Glucose-aware Large Language Model for Intelligent Nutrition Tailoring (GLINT) in Diabetes Self-Care.”	Nov 2025
ASAN Foundation Scholarship in Biomedical Engineering <i>ASAN Foundation</i> Awarded to top-tier students in Biomedical Engineering in Korea, with an annual grant of 20M KRW up to 4 years.	Feb 2025
1st Place, University Venture Investment Competition Korea (UVICK) <i>Ministry of SMEs and Startups, Korea</i> POSTECH won first place and will represent Korea at the VCIC Global Finals in April 2025.	Dec 2024
Kwanjeong Educational Foundation Graduate Scholarship <i>Kwanjeong Educational Foundation</i> Selected as a recipient for one of the most prestigious graduate fellowships in Korea, supporting up to 12M KRW annually.	Mar 2024
PROUD POSTECHIAN Award, Highest Honor <i>President of POSTECH</i> For developing essential skills and competencies through active extracurricular participation.	Feb 2024
Next Generation Leader Scholarship <i>Korea Foundation For Advanced Studies</i> Merit-based scholarship for 20 top national youths for academic excellence and leadership potential.	Feb 2022
National Scholarship of Excellence (Science Eng.) <i>Korea Scholarship Foundation</i> Government-funded scholarship fostering future professionals in science and technology.	Feb 2022

PROJECTS

Pain Related Spinal Cord Neuron Activity Decoding using Deep Learning

Mar 2024–

Developing deep learning model for decoding pain related spinal cord neuron activity.

Personalized PPGR Detection Algorithm and LLM-based Nutrient Management System

Sep 2024–

Developing personalized PPGR detection algorithm and nutrient management system.

VCIC Global Finals

Aug 2024–Apr 2025

Represented POSTECH at VCIC Global Finals. Won first place in UVICK, advancing to global finals.

Apple Developer Academy @ POSTECH - 1st Foundation Program

Apr 2024–Jun 2024

Challenge-based app development using Swift, SwiftUI, and Xcode in a cross-functional team.

Real-Time Arrhythmia Classification System

Aug 2023–Feb 2024

Developed lightweight model on NRF52840 edge device for real-time arrhythmia classification.

FPGA-based Edge Computing System

Aug 2022–Feb 2023

Designed FPGA-based edge computing system for arrhythmia detection using PYNQ-Z2 board.