Jiho Shin

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Education

Imperial College London – Biomedical engineering (Meng)　　　　　　　　　　*2022 – Present*
- Grade: First-Class Expected (CGPA: 4.00) – Year 1: 70.22%; Year 2: 73.82%; Year 3: 76.82%

North London Collegiate School Jeju, South Korea – International Baccalaureate (IB)　　*2016 – 2020*
- Grade: 44/45 (CGPA: 4.00)

Research experience

Master's Student (in progress) – Imperial College London: A Yang lab & ICU Research Group　　*Oct 2025 – Present*
Thesis: "Fusion of Clinical and Radiological Data using Unsupervised Learning for ICU Patient State Representation"
- Benchmarked CXR foundation models for classification and unsupervised patient clustering tasks.
- Developing multimodal fusion framework using VAEs to generate interpretable patient representations.

Project Technical Head – Tanaka Lab, Imperial College London　　*Oct 2024 – June 2025*
Undergraduate Research Project: "Optimisation of Automated Eczema Herpeticum (EH) Diagnosis Model"
- Compared transfer learning architectures and optimised CNN architectures using Optuna to diagnose EH.
- Applied FSGANs to overcome data imbalance and Grad-CAM visualization for model interpretability.

Undergraduate Research Assistant – Tanaka Lab, Imperial College London　　*Aug 2024 – Oct 2024*
Preliminary work for undergraduate project: "Automated EH Diagnosis Model"
- Designed and compared CNN-based and feature-extraction models (GLCM, VGG16) for EH diagnosis.

Undergraduate Research Assistant – ICU Research Group, Imperial College London　　*June 2024 – Aug 2024*
Preliminary work for master's thesis: "AI-assisted Multi-modal Sepsis Mortality Prediction"
- Implemented early fusion of multimodal clinical data for mortality prediction using supervised learning techniques.
- Communicated with clinicians to identify clinical needs and align them with technical objectives.

Undergraduate Research Assistant – Applied Superconductivity Lab, Seoul National University.　　*Jul 2023 – Sep 2023*
"Cost-Efficient Low-Field MRI magnet structures"
- Employed MATLAB's *fmincon* to computationally model and optimise MRI magnet structures.

Posters, Conferences, and Abstracts

- Abstract submission to MedEurIPS workshop on "Benchmarking CXR Foundation Models with Publicly Available MIMIC-CXR and NIH-CXR14 Datasets".　　*Oct 2025*
- Presented master's research at the 2nd Johns Hopkins University-Korea Biotechnology Innovation.　　*Oct 2025*
- Poster presented on "Conceptual design of extremity MRI magnet using commercial MgB2 conductor" at *2023 Korean Society of Super-conductivity and Cryogenics (KSSC) conference*.　　*Sep 2023*

Teaching, and Leadership Experience

Undergraduate Teaching Assistant (UTA) – Imperial College London　　*Jan 2025 – Feb 2025*
- Mentoring first-year undergraduates in the theoretical principles of op-amp-based electronic circuits.

Co-Head of I-X AI Labs – Artificial Intelligence Society – Imperial College London　　*Oct 2025 – Present*
- Hosted AI hackathons and labs supporting student projects.

International Quarantine Officer & Squad Leader – Republic of Korea Army　　*Aug 2021 – Feb 2022*
- Volunteered to serve as an international airport quarantine officer during COVID-19 pandemic.

Technical & Analytical Skills

Technical Skills: Python, PyTorch, TensorFlow, scikit-learn, Keras, NumPy, Pandas, OpenCV, Optuna, Git, MATLAB
Research & Domain Expertise: Machine Learning, CNN Architectures, Foundation Models, Multimodal Data Fusion, Medical Imaging, Clinical Data Analysis (MIMIC-IV), Model Interpretability, Cross-disciplinary Collaboration