

JOON KIM

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EDUCATION

University of California, Berkeley

Aug 2021 – May 2026 (Expected)

B.S. Electrical Engineering & Computer Science, GPA: 4.00/4.00

- **Relevant Coursework:** CS 61B(Data Structures: A+), CS 70(Discrete Math & Probability: A+), EECS 16A/B(Circuits & Control: A+), CS 61A(Python: A+), E 7(MATLAB & Numerical Analysis: A+), DATA 8(Pandas: A), CS 170(Algorithms), CS 188(Artificial Intelligence)

EXPERIENCE

Berkeley Artificial Intelligence Research - CHEN Lab

Berkeley, CA

Undergraduate Researcher

Jul. 2024 - Current

- Designing zero-shot LLM pseudo-label pipeline to improve semi-supervised learning accuracy; advised by Professor Irene Chen
- Took charge of image experiments; investigated LLM agents for image labeling such as CLIP, and showed results on CIFAR-100
- Currently working on RadQA dataset; implemented FixMatch on a non-inference task for baseline comparison

JLK Group

Seoul, South Korea

Research Intern, First Author

Feb. 2024 - May. 2024

- Developed Federated Learning models reaching near identical performance to commercially deployed U-Net models using Python
- Collaborated with four M.D. professionals to investigate the use of Federated Learning in medicine; advised by Dr. Wi-Sun Ryu

Keimyung University

Daegu, South Korea

Independent Researcher, First Author

Feb. 2023 - Jul. 2024

- Proposed a randomized masking algorithm as an obfuscation technique against Deep Leakage in image-based Federated Learning
- Designed experiments to compare performance-privacy trade-offs amongst SOTA defense algorithms; advised by Prof. Sejin Park

Impact AI

Seoul, South Korea

Data Engineering Intern

Jul. 2022 - Aug. 2022

- Developed a data preprocessing pipeline to pattern-match raw datasets of various formats from multiple companies using Python
- Researched and presented eight AI-based B2B SaaS business case studies, showcasing their strengths, weaknesses, and outlooks
- Contributed in designing SQL-like UI/UX features for the main page of web and native applications deployed to client companies

Studio.geo @ UC Berkeley

Berkeley, CA

Undergraduate Researcher

Feb. 2022 - May. 2022

- Experimented Progressive-GAN on the Savio cluster to generate artificial maps using Python; advised by Prof. Clancy Wilmott
- Pictures of 4x4 grid of generated maps of 256x256 pixels trained on real colored maps included in Prof. Wilmott's book proposal

Independent Biomedical Research

Seoul, South Korea

Independent Researcher

Jan. 2020 - Jun. 2020

- Proposed a microarray analysis model for screening early schizophrenia with RNA genetic samples; overcame the lack of public RNA data with oversampling techniques and elected a Deep Neural Network model for inference; advised by Ph.D. Taehyun Kim
- Verbally presented research findings at the 2020 Society of Interdisciplinary Business Research Conference as a representative

SELECTED PUBLICATIONS

- **In-Silo Federated Learning vs. Centralized Learning for Segmenting Acute and Chronic Ischemic Brain Lesions** ([Medrxiv](#)); J. Kim, H. Lee, W. Ryu, et al.; Comparative analysis of Federated and Centralized Learning on brain MRI images. Showed Federated Learning is as effective as Centralized learning on real-life non-i.i.d. brain lesion datasets of ~10,000 patients over 9 institutions
- **Random Gradient Masking as a Defensive Measure to Deep Leakage in Federated Learning** ([Arxiv](#)); J. Kim, S. Park; Compared the efficacy of randomly masking gradients from Federated Learning submissions against other defenses against Deep Leakage from Gradients such as Pruning, Compression, and Noising on Convolution Neural Networks

SKILLS

- Python, PyTorch, Tensorflow, Docker, C, RISC-V, MATLAB, Pandas, Rust, Go, Java, Javascript, Flutter, Firebase