Hun Tae Kim

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SUMMARY

I am driven by a curiosity for intelligence, which has led me to explore multiple fields across Machine Learning and AI, from Federated Learning, GNN, and LLMs. Seeking to deploy AI to creatively and effectively address meaningful challenges.

EDUCATION

University of California, Santa Barbara (UCSB) — Santa Barbara, CA, USA
Master of Science in Computer Science — Sep 2025 - Expected Jun 2027
- Courses: Neural Information Retrieval, Continuous Mathematics, AI for Science

Sungkyunkwan University (SKKU) — Seoul, South Korea
Bachelor of Science in Computer Science and Engineering — Mar 2019 - Feb 2025
- GPA: 4.11 / 4.5 - Graduated Magna Cum Laude, Dean's List Honoree
- Courses: Reinforcement Learning, Operating Systems, Computer Networks, System Programming

The University of Texas at Austin (UT Austin) — Austin, TX, USA
Exchange Student, Electrical and Computer Engineering — Aug 2022 - May 2023
- GPA: 3.78 / 4.0 - Awarded University Honors
- Courses: Machine Learning and Edge AI, Computer Architecture, Algorithms, Data Science Laboratory

RESEARCH EXPERIENCE

Human Language Intelligence Lab, SKKU - Undergraduate Research Assistant — Jan 2024 - Aug 2024
- Developed modules for sentiment analysis, emotion classification, and self-relatedness for a mental health app in collaboration with Seoul Metropolitan Government and Hanyang Digital Healthcare Center, filed 2 patents
- Conducted research on depression severity prediction using digital phenotyping and encoder-decoder architectures

System Level Design Group, UT Austin - Undergraduate Research Assistant — May 2023 - Aug 2023
- Built and optimized a Federated Learning framework for Raspberry Pi and Odroid MC1, implemented top-k Sparsification, reducing communication rounds by 40%
- Processed 68,000 academic papers to classify research into nine topics and built citation networks using a two-layer GCN

PROJECTS & ACTIVITIES

Modern ML Literature Seminar - Co-organizer — Jan 2025 - Aug 2025
- Reviewed 70+ papers across LLMs, diffusion, and vision, maintained an annotated 50+ page wiki and blog
- Focus areas: mech-interp/Transformer Circuits, CLIP/contrastive, DDPM/diffusion, Mamba/MoE, PPO/DPO

LectureDistill: Long-Form Lecture Summarizer — Sep 2024 - Dec 2024
- Developed a lecture summarization pipeline using sentence transformers and multiple merging strategies (KNN, DBSCAN) to efficiently process long video transcripts (30k - 60k tokens)
- Achieved competitive ROUGE, BERTScore using significantly smaller models (406M params) compared to traditional LLMs

MoodScope: LLM Journal Coach — Mar 2024 - Oct 2024
- Developed a full-stack mental health support system integrating multiple LLMs for comprehensive diary analysis
- Implemented real-time voice counseling using OpenAI's Realtime API to facilitate natural conversational support for users

Game of Compression: Prune & Quantize for Edge Inference — Feb 2023 - Apr 2023
- Optimized MobileNet-v1 through structural pruning and quantization on edge, achieving a 65% reduction in inference time
- Received the Best Project Award for achieving the lowest energy consumption among competing teams

PUBLICATION

Three Decades of Low Power: From Watts to Wisdom - IEEE Access — Feb 2024
- Analyzed the interdisciplinary evolution and impact of low power technologies across multiple engineering fields using network science to map research trends over 30 years

TECHNICAL SKILLS

Programming Languages: Python, C/C++, Java, SQL
Machine Learning & Data Science: PyTorch, TensorFlow, ONNX, Scikit-Learn, Matplotlib