

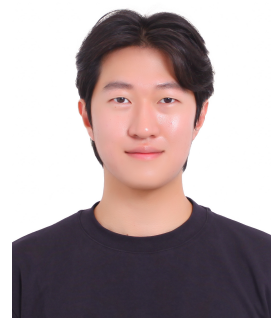
Suwan Yoon

AI Researcher

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Research Interest

I'm Suwan Yoon, a graduate student in the integrated Ph.D. course at Korea University.

My work centers on:

- AI4X (Science, Therapeutics, Co-scientist)
- LLMs (Post-Training, Agentic AI)
- Artificial Intelligence

I also enjoy exploring theoretical areas, such as Optimal Transport & Generative Modeling.

My previous work has centered on time-series analysis and visual language models.

Education

Korea University, integrated Ph.D. course in Artificial Intelligence
(Advisor: Changhee Lee)

Mar 2026 – current

- GPA: 4.5/4.5 (Major : 4.5/4.5)
- **Coursework:** (Advanced) Generative Models, ...

Chung-Ang University, BS in Artificial Intelligence

Mar 2022 – Feb 2026

- GPA: 4.19/4.5 (Major : 4.29/4.5, Magna Cum Laude)
- **Coursework:** Linear Algebra, Algorithm, Pattern Recognition, Machine Learning, Neural Network, Image/Natural Language/Speech Processing...

Experience

Research Intern, Actionable Intelligence Lab @Korea University(+CAU) – Seoul, Korea
(led by Prof. Changhee Lee)

Jan 2024 – Feb 2026

- In collaboration with ETRI, we built Time Series Forecasting models for Proactive Handover.
- In collaboration with Severance Hospital, we analyzed Lifelog data from insomnia patients.

Publications(Top-Tier Conference)

Localizing Input Uncertainty Quantification for Large Language Models via Shapley Values (*NeurIPS 2026*)

May 2026

Seongjun Lee*, **Suwan Yoon***, Changhee Lee

+ Keywords : LLMs, Uncertainty Quantification, Safety, XAI, Biomedical AI

arXiv.2605.28170

ToDi: Token-wise Distillation via Fine-Grained Divergence Control
(*EMNLP 2025 Main, Oral*)

OCT 2025

Seongryong Jung, **Suwan Yoon**, DongGeon Kim, Hwanhee Lee

+ Outstanding Paper Award Finalist (**75/1811** papers nominated),

+ Keywords : LLMs, Knowledge Distillation, Information Theory

arXiv.2505.16297

Publications(Preprint)

Agentic Molecular Recovery via Molecule-Aware Exploration (Preprint) June 2026
Suwan Yoon, Changhee Lee
+ Keywords : Agentic AI, AI4Science, AI4Co-scientist, Molecular Design
arXiv.2606.05847

Correctness-Dependent Asymmetric Target Distributions for Self-Distillation Policy Optimization (Preprint) Oct 2026
Suwan Yoon*, Seongryoung Jung*, Changhee Lee
+ Keywords : Self-Evolving AI, Policy Optimization
Will be updated soon

Other Publications(Conference)

Towards Speed-Agnostic Time-Series Forecasting for Proactive Handover (ICTC 2025, *Oral*) OCT 2025
Junseo Lee*, **Suwan Yoon***, Changhee Lee
ieeexplore.ieee.org/document/11388381

IMMU : IMage to MUsic Sequence for Social Network Service (DCSC Fall 2024 *Student Paper Award, Silver Prize*) OCT 2024
Minsung Kim*, Taehwan Kim*, **Suwan Yoon***, Kisung Lee
* Equal contribution.

Ongoing Projects

[Research] Agentic AI for Biochemical Discovery 2025.11 to current

- Developing LLM-driven agentic AI systems for biochemical discovery. This research explores LLMs as scientific interfaces and reasoning engines that leverage domain knowledge to guide molecule-aware exploration, molecular generation, molecular recovery, and automated drug-discovery workflows.
- This project is supported by NIPA's Advanced GPU Utilization Support Program (16 NVIDIA H200 GPUs), the IITP AI Star Fellowship Support Program, and the 2026 AI Seoul Tech Research Support Program.
- Keywords: Agentic AI, LLMs, Molecular Generation, Molecular Recovery, Drug Discovery, Therapeutics

[Research] Neural Frontiers (LLM Post-Training Research Team) 2025.03 to current

- Leading an LLM post-training research team focused on knowledge distillation, reinforcement learning, RLVR, and alignment to build compact, capable, and safety-aware LLMs.
- Conducting research in collaboration with Seongryoung Jung at Chung-Ang University under the guidance of Prof. Changhee Lee at Korea University.
- Our team's work on token-wise knowledge distillation, ToDi, was accepted as an oral presentation at EMNLP 2025.
- Keywords: LLM Post-Training, Knowledge Distillation, Reinforcement Learning, RLVR, Alignment, Safety

Previous Projects

[Research] Collaboration w/ETRI 2025.01 to .12

- Time-series forecasting for proactive mobile-device handover. Developing a domain-agnostic model robust to speed prediction under changing environments, cell-deployment-agnostic approaches invariant to feature permutation and resilient to missing features. This project was presented at ICTC 2025.
- Keywords: Time Series Forecasting, Wireless Communications, ETRI

[Research] Research on Embedding Space of VLM 2025.03 to .07

- Collaborated with Prof. Junhyuk Kim (CAU) on VLM for semantic segmentation. Proposed two novel losses (HNS, UAI) for fine-tuning CLIP and one metric (Unmix Rate) for evaluating CLIP Zero-shot semantic segmentation. Achieved SOTA performance on CLIP ZS3 task. This project was presented at CAU Engineering

Conference 2025.

- Keywords: VLM, ZS3, Computer Vision

KYS(Keep Your Smile!)

[Link](#)

- Facial Emotion Recognition on Jetson Nano, optimized via pruning and quantization. Reports performance degradation trends caused by model compression on edge devices. This project was presented at DCSC Fall 2025.
- Keywords: Embedded AI, Model Pruning, Quantization

RepHeat

[Link](#)

- A routine timer app that visualizes daily repetitions as a heat map to motivate users. Built with Flutter.
- Keywords: Flutter

IMMU: Social Network Service with IMage to MUsic Sequence

[Link](#)

- Transforms images into music using Riffusion (diffusion-based), BLIP (image captioning), and GPT-3 (sentence generation). This project was presented at DCSC Fall 2024 and CCSSAA Idea-thon 2023.
- Keywords: Image Captioning, Generative AI, Flutter

Scholarship/Awards

2026 AI Seoul Tech Scholarship(Research Grant), Seoul Future Foundation	20,000,000 KRW
2025 CAU Engineering Conference, Software University President's Award	400,000 KRW
2025 Junior Department Honor Scholarship, 1st Semester	Full-Funded
2024 DCS Students Paper Awards	Silver Prize
2023 CCSSAA Idea-thon	Third Prize, 700,000 KRW

Leadership

Band LAON (Live at Our Night), Student Band, Department of AI, Chung-Ang University
Founder and Leader
Founded the student band and led the planning and execution of four performances.

Nov 2023 – Feb 2026

Technologies

Languages: Python, C, Java, Flutter ...

ML Library: Pytorch, Numpy, Pandas, Sci-Kit Learn, Matplotlib, Seaborn, Docker ...