JINSEOP SONG

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EDUCATION

Fulton Science Academy — **Alpharetta, GA**
2024 – 2026

St. Johnsbury Academy Jeju — **Jeju-do, S. Korea**
2023 – 2024

Daegu International School — **Daegu, S. Korea**
2022 – 2023

RESEARCH & ACHIEVEMENTS

Researcher at the NSF AI Institute for Artificial Intelligence and Fundamental Interactions *2025 - present*
Long-term Visiting Researcher

- Researched at the intersection of astrophysics and time series forecasting; created a model that predicts supernova light curves using non-stationary transformer with Mixture-of-Experts with ZTF observation data, under the mentorship of Dr. Alexnader Gagliano and advised by Director Prof. Jesse Thaler (jthaler.net). Collaborated primarily via Zoom, Slack, and email, with initial meeting at MIT.

A2rchi, subMIT project *2025 - present*
Developer

- A2rchi (AI Augmented Research Chat Intelligence) is an open source, end-to-end framework to quickly build an AI support agent for classes and research resources developed jointly by faculty and students in MIT's physics and computer science departments (https://ppc.mit.edu/a2/). I developed a multi-conversation system; advised by PIs Prof. Christopher Paus and Prof. Tim Kraska, CSAIL, with meetings held via Zoom and Slack.

Mealzy, Axion AI Lab (axionailab.com; https://apps.apple.com/us/app/mealzy/id6744392036)
Founder / CEO (Korea Business Registered) *2024 - present*

- Collaborated with five friends in our Applied AI class (members' grades range from 8 to 12) to develop a camera-based AI app that identifies ingredients using search-engine-integrated agentic AI and generates 13,000+ healthy diet recipes via Imagen 3 and Gemini. Served as the sole frontend and backend developer (Flutter with Bloc, Supabase) and one of two AI dev. Published the app on the Apple App Store (US & Canada), where it currently has +90 users.

Korea Generative AI Alliance
Researcher *2023 - present*

- Founded and grew a 1K+ member community of profs, CEOs, and PhDs in AI, Blockchain, and FinTech. Responsible for monitoring the group chat and bringing the latest news on technology.

Independent Research
Researcher *2022 - 2025*

- Have been reading and implementing state-of-the-art papers since 2021 in time series forecasting and transformer architecture optimization. Authored and submitted a solo paper to ICML 2025 (main conference, rejected) and resubmitted to ICLR 2026 (main conference, under review), presenting a multi-resolution approach for long- and short-term time series forecasting.

Startup: Growing Up Co.
AI Engineer *2024 - 2025*

- Developed a freelancer–company matching system using FAISS with token embeddings, one of the team's core products. Collected and processed data via web crawling. Collaborated with a team of ~11 colleagues, primarily Korea University undergraduates, working out of WeWork in Yeouido.

Startup: BookStar
Frontend Developer *2023*

- Started as a side project and later evolved into a startup. Served as one of two frontend developers, building 2 of 5 main pages in Flutter with Riverpod. Collaborated closely with PM, backend developers, and designers. BookStar is an iOS app targeting the Korean market, created by a team of 9 colleagues (primarily Soongsil University students and working professionals).

Researched on Reinforcement-free Agentic Loop System
Researcher *2025*

- Conducted short-term research on developing reinforcement learning (RL) pipelines for Agentic AI (Octotool) using Verl, in collaboration with Dr. Bowen Chen and Dr. Pan Lu, Stanford Artificial Intelligence Laboratory (SAIL). Coordinated via Slack and Zoom.

Opensource: ChatGPT Agent SDK
Developer *2025*

- Added Reasoning Content to ChatGPT Agentic AI via GitHub pull request (https://github.com/openai/openai-agents-python/pull/871).

Side Project: Re-Beethoven
Developer *2024*

- Created a custom non-conditional DiT model for music generation, built on AuraLoss and Differential Transformer, trained on Beethoven's works to generate Beethoven-like compositions. Over the summer, made over 100 commits. (https://github.com/axion66/Regenerate-Beethoven)

Side Project: Quant
Developer *2024*

- Developed an automated cryptocurrency trading agent using deep reinforcement learning and pair trading strategies. I spent my entire summer learning the RL field.

Side Project: Self-Driving Car Simulation with PPO
Developer *2024*

- Built a self-driving simulation using Godot and PPO deep reinforcement learning algorithm.

Side Project: Word2Emotion
Developer *2023*

- Collaborated with friends interested in neuroscience to conduct a self-experiment monitoring participants' EEG signals while viewing different words. Aimed to classify viewed words from brain signals. Responsible for data preprocessing and building the AI model. Although results did not yield meaningful accuracy, I gained experience in EEG analysis and model development. (https://github.com/axion66/Attention-based_EEG_analysis)

Awards

ACCESS Explore Award - Project "Forecasting Light Curves of Supernovae via Mixture-of-Experts Transformer Architecture" (PHY250343)

- Awarded 200,000 ACCESS Credits for high-performance computing research under the IAIFI (Harvard–MIT Institute for Artificial Intelligence and Fundamental Interactions) grant.
- Developed and deployed large-scale transformer architectures for non-stationary supernova light-curve prediction, leveraging ACCESS HPC resources for data-intensive astrophysical modeling.
- Contributed to advancing Mixture-of-Experts frameworks for astrophysical forecasting, bridging machine learning with fundamental physics research.

Google IgniteCS (NSA-funded) First Place

- Won 1st place among 297 teams from +8 countries in the Software Applications and Systems category. My product was an Agentic AI algorithm capable of efficiently searching and analyzing web data.

USA Artificial Intelligence Olympiad Silver - Final Round at MIT

- Earned a silver medal in a national-level programming competition, ranking in the top 25 nationwide. The contest tested linear algebra, multivariable calculus, and matrix calculus for AI. A recording of my exam performance is available on YouTube.

USA Computing Olympiad - Silver (2022), Gold (2023)

- Achieved Silver and Gold Medals in consecutive years at the USACO, a national competition in algorithms, data structures, and programming.

Korea Science & Engineering Fair - Bronze Medal

- Received Bronze Award at the Korea Science and Engineering Fair (KSEF) for AI research on reinterpreting latent information in CLIP (Learning Transferable Visual Models from Natural Language Supervision) embeddings by reverse-engineering the training process of cosine similarity-based CLIP.

American Computer Science League Finalist (ACSL)

- Qualified for Final round for ACSL in both intermediate and senior division.

YouthCause - Student Ambassador, Student Reporter

- Affiliated with The World Federation of United Nations Associations (WFUNA), the position was given to students who share their local issues, initiatives, and stories with a global audience.

Clubs

Python 101 Club

Founder *2023 - 2024*

- As founder, taught 22 students clean Python code useful for team-project management, and instructed them on how corporations manage Python files.

USACO/ACSL Club

Vice-President (11-12), Member (9, 11) *2022 - 2023, 2024 - present*

- Taught 17 middle and high school students to prepare for USACO Silver/Bronze contest and ACSL Senior and Intermediate divisions. Selected by classmates in the second semester as VP.

Other Clubs include: AI 101 Club [Secretary], FTC Robotics Club [Programmer], Astronomy Society, Jeju-island Volunteer Club, Math Competition Club, Science National Honor Society

Coursework:

AP: Computer Science A & Principle, Statistics, Calculus BC, Chemistry, Physics C Mechanics, Precalculus, Macro Economics

Honors: Applied Artificial Intelligence, Japanese III, Chinese I, II, III, IIII, Contemporary Literature, US History, American Literature, Physics

OTHER SKILLS

Languages: Korean (Native), English (Native), Japanese (Proficient), Chinese (Fluent)
Programming Languages: LangGraph, Verl, PyTorch, Jax, Huggingface, Flutter (BloC, RiverPod), Supabase, Firebase, GCP, DigitalOcean, AWS
Hobbies: Running, mantra meditation, drinking chocolate milk