Kwak, Hyeon-Jeong

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EDUCATION

Ewha Womans University, Seoul, Korea **MAR 2021 - PRESENT**

Bachelor of Computer Science & Engineering, Mathematics

- Grade : Senior
- Overall GPA : 4.23/4.3, Major : 4.21/4.3
- Scholarship
  - Korea Government Scholarship for Science and Engineering (2023 – Present)
  - Top Merit Scholarship (2 times)
  - Merit-based Scholarship (2 times)

TECHNICAL SKILLS

Technical skills

- **Programming languages** : Python, C/C++, Java, JavaScript, SQL
- **Machine Learning Frameworks**: Pytorch, Tensorflow, Keras
- **Web Development Frameworks:**
  - **Front-end:** React, React Native, Flutter, Next.js
  - **Back-end:** Node.js, FastAPI, Spring
- **Databases & Cloud** : MySQL, AWS (EC2, S3, RDS), Azure
- **DevOps & Tools**: Docker, GitHub, Jenkins, CI/CD

PROJECTS

Starlink Traffic Classification Research **SEP 2024 – PRESENT**

- PyTorch, Keras, Scikit-learn, Numpy, Pandas
- Github : https://github.com/Capstone-RexT

- Led research on Website Fingerprinting, a threat to network security, to classify encrypted traffic using packet-level metadata (e.g., packet size, direction, timing).
- Designed a custom traffic feature extractor & Transformer based Hybrid model
- Applied **LLaMA 3.2 1B** for sequence-level embedding; achieved **56.2%** accuracy, outperforming CNN baseline (**45.1%**).

ArtChemy : Multimodal AI Chatbot for Art Experience **DEC 2024 – FEB 2025**

- FastAPI, Flutter, MySQL, Amazon EC2, S3, RDS, Docker, GitHub
- Github : https://github.com/SKT-FLY-AI-project
  - Engineered an LLM-driven chatbot to assist visually impaired users in experiencing art through multimodal interaction (image, text).dialogue.
  - Integrated Qwen-VL-Chat (2.5B) with Retrieval-Augmented Generation (RAG) for accurate retrieval of artist and exhibition data..
  - Developed a FastAPI backend with JWT authentication, WebSocket-based communication, and MySQL CRUD operations, and deployed the system via Docker on AWS EC2.

What To Do?: Personalized Schedule Recommender **OCT 2024 – NOV 2024**

- FastAPI, Flutter, LangChain, RAG, LLM
  - Collaborated on a project with Sogang University x Upstage LLM Project to create a personalized itinerary recommendation system.
  - Developed a FastAPI backend that receives real-time user context (location, weather, mood) and dynamically interacts with an LLM-driven planner..

Poever : Real-time Posture Correction App **SEP 2022 – DEC 2022**

- React Native, Node.js, OpenPose
  - Led the development of a mobile app that analyzes sitting posture in real-time using OpenPose for joint detection.
  - Built a backend pipeline in Node.js that computes joint angles (spine, neck) using trigonometric functions, optimizing posture analysis.
  - Awarded 2nd place in the university's "Challenge Semester" competition for innovative use of AI in health tech.

EXPERIENCE

AI Research Assistant, AISec Lab, Ewha Womans University **JUL 2022 – FEB 2024**

- Led research in AI-driven network security, focusing on website fingerprinting..
- Developed a deep learning model for traffic classification, utilizing packet-level metadata such as timestamps, direction, and packet size.
- Published research in IEEE Access and the KIISC journal, contributing to advancements in encrypted traffic analysis.

FLYAI Bootcamp Participant, SK Telecom **DEC 2024 – FEB 2025**

- Gained hands-on experience in AI, DevOps, and MLOps best practices through intensive training in cloud environments.
- Collaborated on real-world LLM application cases, gaining experience in deploying AI models and managing cloud-based solutions.

LANGUAGES

- **Korean – Native**
- **English – Professional Working Proficiency** (TOEIC 895)

PERSONAL STATEMENT

From Curiosity to Purpose

Ever since I was young, I've been drawn to the hidden mechanisms behind everyday systems. What others might see as "magic," I saw as a puzzle—waiting to be taken apart, understood, and rebuilt. That mindset naturally led me to artificial intelligence, and more specifically to large language models (LLMs), which fascinated me with their ability to interpret nuanced prompts and respond with near-human fluency. For me, AI isn't just a tool for automation—it's a new language between humans and machines, with the potential to redefine how we learn, create, and communicate.

Bridging Theory and Practice

But I didn't want to simply use AI—I wanted to *understand* it. That desire pushed me to double-major in Computer Science and Mathematics at Ewha Womans University, where I dove into topics like linear algebra, probability, and numeric analysis. These weren't just academic requirements—they were the mathematical backbone of the systems I hoped to build. At AISec Lab, I applied these foundations to deep learning-based traffic classification research, ultimately co-authoring publications in IEEE Access and KIISC. I complemented this research with hands-on development through projects like the Sogang X Upstage LLM system and SK Telecom's FLYAI Bootcamp, where I built scalable AI services using FastAPI, Docker, and AWS. These experiences taught me the power of translating theory into real-world impact.

Growing by Sharing

Equally important to me is the belief that knowledge truly thrives when it is shared and nurtured collectively. As a tutor in Ewha's structured algorithm program, *Altu-Bitu*, I created weekly lectures and led code review sessions tailored to each student's pace. I also led AI paper reading groups focused on cutting-edge LLM topics like hallucination, RAG, and Chain-of-Thought. These communities not only allowed us to collectively explore complex topics, but also deepened my own understanding as I learned from the diverse perspectives of my peers. Through these experiences, I witnessed how collaboration and shared insight can drive both individual and collective growth, reinforcing my commitment to learning and evolving together with others.

Engineering with Empathy

I bring a rare combination of research depth, full-stack engineering fluency, and clear communication. Whether it's building real-time apps with OpenPose, deploying secure LLM infrastructures on the cloud, or mentoring teammates on how to debug recursive functions—I thrive at the intersection of theory and practice. I don't just enjoy solving problems. I enjoy solving the *right* problems, in ways that are technically sound, ethically aware, and deeply human-centered. That's the kind of engineer—and teammate—I strive to be.