Portfolio :
https://sungmin603.github.io/

Sung-min Lee

Phone: +82-10-6410-2463
E-mail: 603lsm@gmail.com

Summary

- **AI & Computer Vision:** Developed LLM services, RAG pipelines, and computer vision solutions.
- **Data Science Workflow:** Managed end-to-end processes and analytics
- **Full-Stack Development:** experience across AI projects, data pipelines, web, server, and databases.
- **Project Leadership:** Served as manager or assistant, coordinating teams
- **Adaptability & Responsibility:** Strong learning ability with accountability in technical tasks.

Experience

Samsung Electronics Co., Ltd.   Hwaseong-si, Republic of Korea
Staff Engineer, Evaluation & Analysis Process Development   2022.01 - Present
- Development of AI projects with LLMs, RAG, and AI-based image processing.
- Development of data analytics with data pipeline, RCA, and dashboard.
- Development of Full-stack web, and tooling infrastructure.

Samsung Electronics Co., Ltd.   Hwaseong-si, Republic of Korea
Engineer, Evaluation & Analysis Process Development   2018.11 - 2021.12
- Root cause Analysis in DRAM(D1z, D1a, D1b, D1c) and developing auto analysis solution.
- Managed, tracked and predicted main lots' quality management.
- Abnormal detection with measurement and inspection.

Hyundai Mobis Co., Ltd.   Yongin-si, Republic of Korea
Research Engineer, Steering System Engineer Team   2017.07 - 2018.10
- Development/evaluation of car's steering system
- Gear System optimization

Main Projects

LLM-RAG search platform   2025.03 - Present
Developed a web platform capable of natural language search based on LLM-RAG targeting SQL queries and Python scripts, to address the complexity of our internal data pipeline and the limited SQL experience our users have.
Served as project lead and main developer, overseeing overall project management, architecture design, data pipeline development, implementation of a modular RAG and LLM search flow, as well as performance evaluation and testing.
Enabled sharing and searching of previously inaccessible SQL queries and Python scripts. And improving internal knowledge accessibility. Achieved average user satisfaction of 85/100 and search performance score of 80/100.

Data Analysis System   2018.11 - Present
Developed a Root Cause Analysis (RCA) system to detect defects occurring during semiconductor development, addressing the traditional challenge of high manpower and time requirements, and expertise-dependent outcomes.
Sole developer, responsible for end-to-end project development, including data pipeline, backend, frontend, and project management and ongoing operations.
Established as the official RCA tool for the R&D center, reducing 50% of working hours for specialized RCA experts. Supported approximately 300 monthly users.

Recipe Database and web platform   2023.03 - Present
Developed a recipe database by combining manual data with indirectly extracted internal data of
semiconductor's cleaning process, addressing security limitations that previously prevented data
extraction, sharing, utilization, and analysis.
As a main developer, Designed end-to-end data pipelines and visualizations. Managed backend and
database systems for the platform.
Enabled recipe sharing, improving internal accessibility. Supported approximately 300 monthly users.

Lot quality management   2020.03 - 2021.12
Monitored process history of main lots during semiconductor development to predict outcomes and
analyze defects, supporting process and measurement planning for future production.
Proactively predicted defects and prepared countermeasures in advance, enabling faster responses in
measurement, inspection, and analysis. Identified critical process issues, contributing to accelerated
development timelines and process improvement initiatives.
Ensured comprehensive lot quality management across D1a, D1b, and D1c product development phases,
including schedule following, event tracking, and process monitoring.

Education

Seoul National University   Seoul, Republic of Korea
M.Sc., Department of Naval Architecture and Ocean Engineering   2015.09 ~ 2017.06
- Majoring in the optimization algorithm
- Optimization of Ship Route Planning (M.Sc. thesis)

Seoul National University   Seoul, Republic of Korea
B.S., Department of Naval Architecture and Ocean Engineering   2009.03 ~ 2015.08

Additional

- Teaching: Practical ETL course / Fundamentals of Data Analysis / Spotfire Workshop
- Publication: 'Spotfire 간단히 그래프 그리기', ISBN:9788924098136, 2022.07
- Awards: 2025 AI BP festival / 2024 SRD e-Technology Journal / 2023 The Innovator

Technical Skills

- Python (Language), SQL (RDBMS/NoSQL/vectorDB/graphDB), FastAPI (Backend)
- PyTorch, langgraph, Sklearn (ML/Data), Docker, Git, Linux (DevOps), Spotfire (BI)