JUNGMIN SEO

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EDUCATION

University of California, San Diego — CA, USA
Exchange Student, majoring in Computer Science and Engineering — Sep 2025 - Present

Seoul National University — Seoul, South Korea
B.S. in Electrical and Computer Engineering — Mar 2020 - Expected Sep 2026
GPA: 3.85 / 4.30 (3.76 / 4.00)

RESEARCH EXPERIENCE

Research Intern, Visual & Geometric Intelligence Lab — Seoul, South Korea
Seoul National University — Jun 2024 - Present
Advisor: Prof. Jaesik Park

- Researched on stable odometry update with multi-cam LIVO SLAM frameworks

Research Intern, Data Mining Lab — Seoul, South Korea
KAIST Kim Jae-chul AI Graduate School — Sep 2024 - Dec 2024
Advisor: Prof. Kijung Shin

- Personal research on Graph based Item-to-Item Recommendation System to improve item connectivity

Text-to-Music Generation Enhancing Instrumental-Level Controllability — Sep 2024 - Dec 2024
Generative AI Research Project
Advisor: Prof. Jaesik Park

- Developed an autoregressive music generation pipeline using the AudioLDM2 architecture as a backbone
- Proposed a novel noise scheduling method based on DDIM scheduler incorporating a reference latent vector with decaying guidance weight
- Integrated instrument-specific LoRAs trained on dedicated datasets to enable timbre control

WORK EXPERIENCE

Republic of Korea Air Force (ROKAF) — Apr 2022 - Jan 2024
IT Equipment Support Team, Intelligence Information Systems Division

- Maintained internal network systems, including firmware versioning and IP address management for IT infrastructure

INDUSTRIAL PROJECTS

Dable (Ad-Tech) Sep 2024 - Dec 2024

Ad-Fatigue Analysis

- Identified linearly decreasing CTR from repeated ad exposures, and proposed optimal replacement timing based on decay trends
- Discovered mild fatigue effects from visually similar ads

CTR Prediction Regularization for New Ads

- Proposed a training scheme to mitigate uncertainty in CTR prediction for newly registered ads
- Designed a regularization loss using feature-based clustering to emphasize dominant predictors of CTR

NEWNEEK (Content Curation) Apr 2024 - Jul 2024

Multi-Tower Recommendation System Development

- Built a six-tower recommendation model reflecting short/long-term user preferences, item popularity, and timeliness
- Implemented personalized re-ranking to match item distributions to user behavior
- Designed rule-based logic to address the cold-start problem and introduced controlled randomness to reduce filter bubbles

Align AI (Conversational AI) Mar 2024 - Jun 2024

RAG-based Recommendation System Deploying Knowledge Graphs

- Constructed user knowledge graphs from dialogue data
- Augmented item attributes using LLMs to form item-side knowledge graphs
- Developed a recommendation system linking user and item KGs based on node similarity to ensure interpretability
- Utilized Neo4j and LangChain

PERSONAL PROJECTS

Computer Architecture Simulator Implementation Jun 2025

- Designed and implemented a pipelined CPU with branch prediction (Gshare, perceptron) in Verilog
- Developed a multi-level, non-blocking, write-back, inclusive cache in C++

Image Classification with Noisy Labels Jul 2024

- Designed a robust training model structure by co-teaching networks to solve a Kaggle contest hosted by Prof. Jonghyun Choi

Reordering Twisted Image Sequences into Coherent Text Jun 2024

- Developed an attention-based sequence model to reorder jumbled image inputs using ordered text labels

Statistical Validation of ESG Survey Data Aug 2024

- Verified construct validity and reliability of ESG survey responses via Exploratory Factor Analysis using SPSS

Illuminance-Adaptive Circuit System Jun 2021

- Designed and prototyped a PCB that automatically adjusts lighting intensity in response to ambient brightness using photoresistors

Multi-Robot Tracking Algorithm (SNU College of Engineering Competition) Jul 2020

- Developed a tracking algorithm under map constraints using Arduino-based robots
- Implemented and evaluated tracking strategies on a physical model environment

EXTRACURRICULAR ACTIVITIES

Growth Hackers, SNU Data-Driven Business Strategy Society Mar 2024 - Dec 2024

- Participated in data-driven consulting projects in collaboration with DABLE, NEWNEEK, and AlignAI
- Extracted actionable insights through statistical modeling and machine learning to support innovative business solutions

SUB, SNU Broadcasting Club Mar 2020 - Dec 2021

- Designed infographics and visual content to support broadcast storytelling and communication

SIGMA INTELLIGENCE, SNU Robotics Club Mar 2020 - Aug 2020

- Participated in robotics design and control system development as a member of a student-led engineering club

SKILLS

Artificial Intelligence

- Generative AI (CV, NLP), Recommender Systems, Graph Neural Networks, Reinforcement Learning on LLMs

Mathematics

- Vector Calculus, Linear Algebra, Signal Processing, Probability Theory, Mathematical Statistics

Programming Language

- C/C++, MATLAB, Python (PyTorch); contributed to the enhancement and implementation of prior AI research projects

Hardware Description Language

- Verilog; implemented pipelined CPU with branch prediction

Others

- LaTeX Editor (Overleaf), 3D Modeling (Fusion 360), Statistical Software (SPSS)

LANGUAGES

Native Speaker of Korean
Fluent in English

- TOEFL IBT (96/120)