

Sungwook Yoo

I am currently working as a software engineer at Naver Co., Ltd. specializing in e-commerce domain AI research and modeling. My role as a software engineer is to:

- AI modeling for high performance that meets planning intent of e-commerce domain
- Research to understand recent technological trends
- Develop common logic for time and memory efficiency

I have expertise in optimizing machine learning (or deep learning) models for high performance and speed, while staying up-to-date with the latest trends in the field.

I constantly analyze domain-specific characteristics to optimize recommender systems for the target service, and I conduct research to find solutions to optimization challenges.

Additionally, I stay informed about the latest trends and research papers related to advanced recommendation systems (also known as personalized recommendation).

I am eager to share my accumulated knowledge and expertise with the research team to foster synergy and stay ahead of the latest technological advancements.

Although my primary focus is on back-end programming, I also possess basic front-end skills, as I have experience building end-to-end models for recommendation services in my work.

Furthermore, as a hobby, I occasionally engage in front-end programming when blogging.

Education



Seoul National University 2018 - 2020

Master of Science, Knowledge Discovery and Database Research Lab, Electrical and Computer Engineering



Hongik University 2012 - 2013, 2015 - 2018

Bachelor of Engineering, Electronic and Electrical Engineering, 2 year military service

Publications

How Important is Periodic Model Update in Recommender Systems?

Lee, H., Yoo, S., Lee, D., and Kim, J. How Important is Periodic Model Update in Recommender Systems? In Proceedings of the 46th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR '23), July 23-27, 2023, Taipei, Tai-wan. DOI: [10.1145/3539618.3591934](https://doi.org/10.1145/3539618.3591934)

Simple and Efficient Recommendation Strategy for Warm/Cold Sessions for RecSys Challenge 2022

Lee, H., Yoo, S., Yang, A., Jang, W., & Park, C. (2022). Simple and Efficient Recommendation Strategy for Warm/Cold Sessions for RecSys Challenge 2022. In Proceedings of the Recommender Systems Challenge 2022 (pp. 50-54). DOI: [10.1145/3556702.3556851](https://doi.org/10.1145/3556702.3556851)

Improving Recommender Systems with Review-based Attention Mechanism

S. Yoo, H. Goo, K. shim, "Improving Recommender Systems with Review-based Attention Mechanism." Proc. of the KIISE Korea Computer Congress 2020, pp 82-84, 2020. (in Korea)

Improving a CNN-based Recommender System with Attention Mechanism by Considering Individual Factors

S. Yoo, H. Goo, K. shim "Improving a CNN-based Recommender System with Attention Mechanism by Considering Individual Factors" Proc. of the KIISE Korea Software Congress 2019, pp. 84-86, 2019. (in Korea)

Experience



NAVER Corp 2024.02 -

Senior Software Engineer for E-commerce Domain AI Research and Modeling (Shopping AI Foundation Model for Personalized Search)



Kakao Corp 2020.09 - 2024.02

Software Engineer for Recommender System, Research Engineer

Skill

Programming Languages *Familiar:* Python | C++ | SQL *Experienced:* Cython | Java | Rust | Javascript | CSS

Software Development *CD/CI:* Git | Jenkins | Docker | Kubernetes *DB:* MySQL | MongoDB | Redis | RocksDB

Frameworks & Libraries PyTorch | Tensorflow | Redash | Kafka | Hadoop | Spark | Airflow | Django | Sanic | Numpy | Pandas | Scikit-learn

Project

Query-Aware Representation Learning for Similar Categories and Brands 2025.02 -

Developing a contrastive learning-based sentence embedding model that utilizes multi-modality input (natural language queries, category, and brand tags) to enhance intuitive and precise product exploration in shopping search systems.

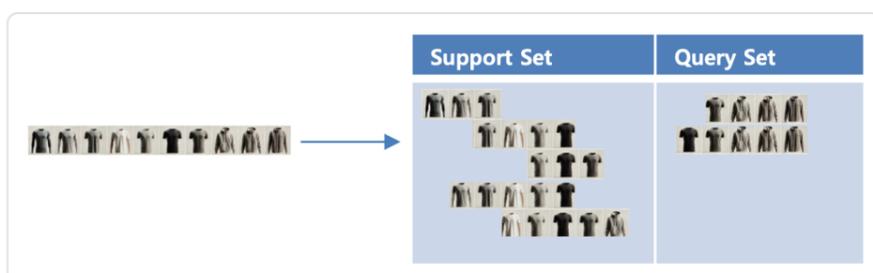


Building a Batch-wise DAG Pipeline Tool for Large-Scale Search Log Processing and Model Training 2024.12 - 2025.02

Developing a DAG pipeline tool for large-scale search log batch processing and model training for diverse services in NAVER. Designed and implemented an Apache Airflow-based workflow on an internal Kubernetes (k8s) cluster to automate search log collection, preprocessing, model training, and deployment.

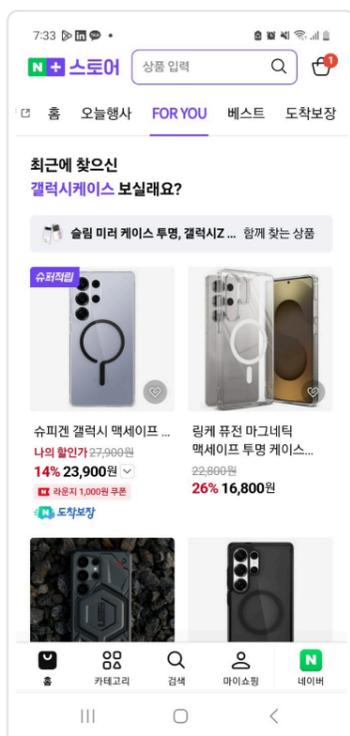
Session-based Meta Learning Model for Personalized Recommendation 2024.11 - 2025.01

Implemented a model that applies optimization-based meta-learning techniques to session-based recommendation systems, enhancing personalized recommendations.



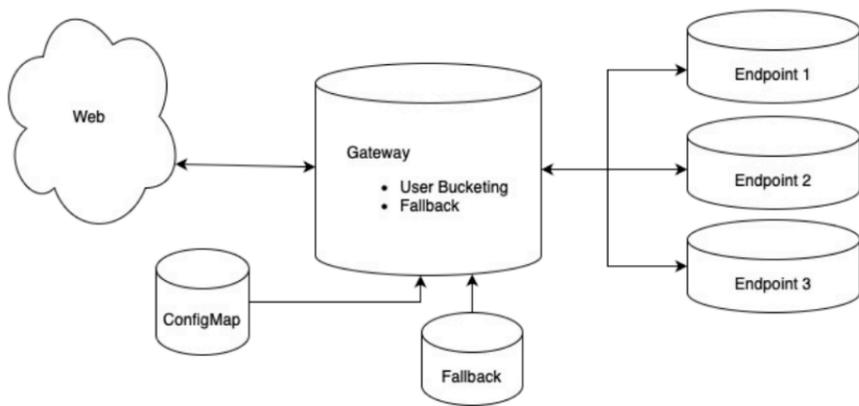
Personalized User Embedding for Search Engine 2024.02 - 2024.11

A project aimed at developing a personalized user embedding model for large-scale product searches in shopping. In order to alleviate cold-start problem, CLIP-based Text Encoder is utilized with a modified two-tower approach, optimizing user session embeddings for improved personalized search performance.



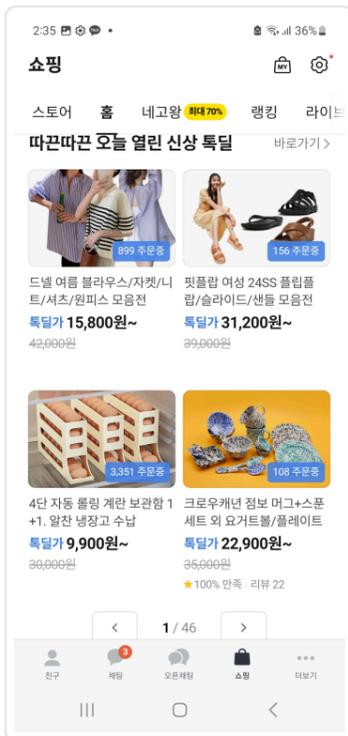
A/B Testing Framework for Recommendation or Searching 2023.08 - 2024.01

A project to develop A/B testing service to find optimized policy for recommendation or searching. The A/B testing framework in charge of assigning user bucketing and relaying the results of endpoint logics. Also, it provides fallbacks for each service for giving stable quality of services. It is designed to provide stable services through Kubernetes-based orchestration.



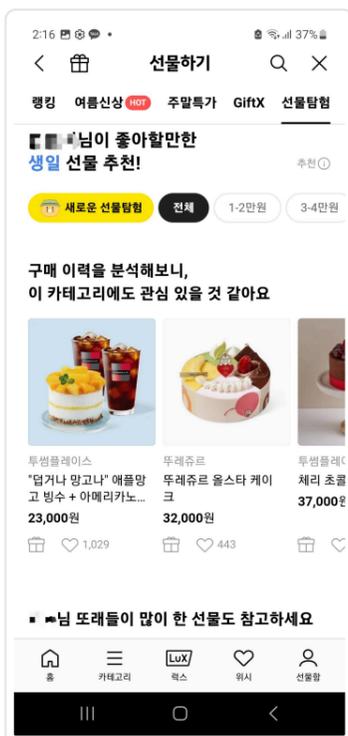
Personalized Re-ranking for Recommendation 2023.09 - 2024.01

A project to develop a personalized recommender model for discount products. The model utilizes users' feedback and reranking the discount products by real-time.



AI based Gift Exploration and Explainable Recommendation 2023.07 - 2023.09

A project to develop a recommender model for gift exchange history to provide high-quality services. The model is based on machine learning and gift exchange history between receivers and prior knowledge. Also, the service provides various card types of explanations.



Contextual Multi-armed Bandit Project 2021.05 - 2023.07

A project to develop a recommender model based on contextual multi-armed bandit to provide high-quality services for diverse domains; e.g., articles, comics, blogs, commerce. The technologies used in this project were applied and tested across a wide range of services, from dynamic to static characteristics as follows.



Developing an Advanced Middle-ware Platform 2020.09 - 2021.04

A project to provide a memory-efficient, low-latency module for referral computing. The module created here is used a lot in the

recommendation logic of various services. Some libraries have been opened. E.g., [Buffalo](#), [N2](#)

Advanced Text Embedding Module 2021.02 - 2021.12

A project to create a module that can universally use a Korean-based natural language models (e.g., a rule-based dictionary or a pre-trained model like BERT).

Improvement of the Question and Answer System 2020.01 - 2020.05

A research project to improve a question and answer system using multi-task learning via attention module.

Activity

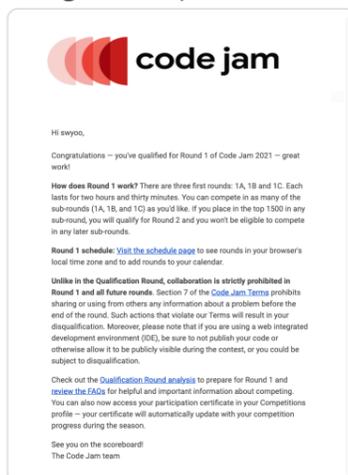
Participated in a pull request for the pytorch-lightning repository on GitHub. [Github_PR](#)

Submitted a bug report for librdkafka on Confluent Inc.'s GitHub Issues. [Github_Issue](#)

Reported a bug in RocksDB to the Facebook software team on GitHub. [Github_Issue](#)

Contributed to Konlpy by resolving an issue with MeCab parsing in a GitHub pull request. [Github_PR](#)

Google Code Jam 2021 - Round 1 Qualifier



Conducted official paper reviews for Recsys 2021 at Kakao [\[1\]](#)[\[2\]](#)[\[3\]](#)

Received the Best Paper Award at the Korea Software Congress 2019, organized by KIISE (in Korea) [Website](#)

Contact

