Youngsoo Lee

Software Engineer

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🏢 WORK EXPERIENCE

Jul 2021
~ present

HYPERCONNECT, Machine Learning Software Engineer
Seoul, Korea

Azar 1:1 matchmaking recommender system *(Oct 2022 ~ Present)*

- <u>*Project summary:*</u> Developing machine learning based recommender system on Azar 1:1 video chat, which is the core feature in Azar.
- <u>*Roles:*</u> Backend system design and feature development.
- <u>*Main features:*</u> Session-based recommendation, cost optimization.
- <u>*Results*</u>: KPI (chat duration & user retention) increased.

Feature Store for ML *(Jun 2022 ~ Present)*

- <u>*Project summary:*</u> Building in-house feature store platform for ML apps to reduce training-serving data skew and to improve productivity.
- <u>*Roles:*</u> Project lead, system design, and feature development.
- <u>*Results:*</u> Integrated with various ML applications including recommender systems and moderation systems, and showed immediate model performance & productivity improvements after integration.
- <u>*Etc:*</u> Talk at DEVIEW 2023 [c.1]

Machine learning system for community health *(Apr ~ May 2022, Dec 2022)*

- <u>*Project summary*</u>: Improved community moderation system that quickly detects users who violate community health guidelines in Azar.
- <u>*Roles:*</u> Backend feature development and data analysis.
- <u>*Results:*</u> Decreased number of abusers in Azar.

Live-streaming recommender system *(Jul 2021 ~ Sep 2022)*

- <u>*Project summary:*</u> Applied machine learning based multi-tenant live-streaming recommender system to Azar Live and Hakuna Live.
- <u>*Roles:*</u> Project lead from Feb 2022 to Sep 2022. Backend system design, feature development, data analysis, and frontend development for in-house admin.
- <u>*Main features:*</u> Ranking system using ML model, a/b testing component, multi-tenant data management logic, real-time vision feature pipeline, in-house admin.
- <u>*Results:*</u> KPI (live-room watching time) increased.
- <u>*Etc:*</u> Technical article on [a.1].

Jul 2020
~ Sep 2020

NAVER Corp, Software Engineer Intern
Seongnam, Korea

In-house deep learning model portal for AI research scientists

- *Project summary:* Designed and developed a deep learning model management portal for AI research scientists to increase research productivity and to reduce GPU cost.
- *Roles:* Backend & frontend system design and feature development.
- *Main features*: Model upload & download, search by hyperparameters, model sharing.
- *Results:* All team members (N < 10) used the portal system.

In-house vision model training codebase development

- *Project summary:* Developed the in-house vision model training codebase (PyTorch) and built an automated testing environment specialized for the ML code.
- *Roles:* ML modeling code improvements within guide of the team leader.
- *Results:* Reduced wasted time when running training code, improved CI pipeline.

* Review post after the internship (Korean): https://prev.github.io/posts/AI-SWE-Internship/

Feb 2019
~ Jul 2019

JENNIFERSOFT, Frontend Software Engineer Intern
Paju, Korea

Monitoring solution for frontend developers

- *Project summary:* Developed performance monitoring solution for frontend developers. (https://front.jennifersoft.com/about)
- *Roles:* Developed frontend part of the product within guide of a senior engineer.
- *Main features:* Real-time dashboard, large-scale table, admin, theme management system.
- *Results:* Product quality improvements.

Jul 2018
~ Aug 2018

Ratchet Cloud, Software Engineer Intern
Vancouver, Canada

Open-source game forum system

- *Project summary:* Developed a game forum system as an open-source which might be used in future projects in the company.
- *Roles:* Backend & frontend system design and feature developments with other intern engineer.

Jan 2015
~ Jun 2016

Freelancer Software Engineer
Seoul, Korea

- Developed various websites and web applications.

🏫 EDUCATION

Sep 2019 ~Aug 2021	**M.S. in Computer Science, KAIST** Daejeon, Korea • GPA: 4.0 / 4.3 • Advisor: Sunghee Choi • Thesis: *Progressive Transmission and Inference of Deep Learning Models Served over Network* (Extended work on [p.2])
Mar 2015 ~Aug 2019	**B.S. in Computer Science, Hanyang University** Seoul, Korea • GPA: 3.97 / 4.5 • Activities and societies: Algorithm Research Club
Mar 2012 ~Feb 2015	**Korea Digital Media High School** Ansan, Korea

🗂 OTHER EXPEIENCE AND ACTIVITIES

Jul 2016 ~ Oct 2017	**SW Maestro Program** Seoul, Korea • A program operated by Korean government to promote best software engineers and entrepreneurs. • Awarded as top 8 teams among 33 teams, presented at the "100+ Conference" hosted by Ministry of Science and ICT, and signed MOU with 3 companies based on the technology.

💻 SOFTWARE DEVELOPMENT SKILLS

Language	**Python**, Kotlin, Scala, TypeScript, JavaScript, Go[†]
Backend	**FastAPI**, **Apache Flink** (streaming), Flask, Spring[†], Express[†]
Web Frontend	React, SASS, Webpack, jQuery
Database	**Cassandra** (ScyllaDB), MySQL, Redis, DynamoDB[†], MongoDB[†]
DevOps	AWS, Kubernetes, Grafana, Prometheus, Opentelemetry
ML/Data	**BigQuery**, Airflow, Kubeflow, PyTorch[†]

†: little experience
Bold: main stack

🧵 PUBLICATIONS

[p.2] **Youngsoo Lee**, Sangdoo Yun, Yeonghun Kim, and Sunghee Choi, "**Progressive Transmission and Inference of Deep Learning Models**", *20th IEEE International Conference on Machine Learning and Applications (ICMLA),* 2021
https://arxiv.org/abs/2110.00916

[p.1] **Youngsoo Lee** and Sunghee Choi, "**A Greedy Load Balancing Algorithm for FaaS Platforms**", *5th International Conference on Cloud and Big Data Computing*, 2021
https://dl.acm.org/doi/10.1145/3481646.3481657

🔬 PATENTS

[i.1] 추천 방송 정보를 제공하는 장치 및 그 방법 (출원), 2022

🎙 INVITED TALKS / CONFERENCES

[c.1] 실시간 추천 시스템을 위한 **Feature Store 구현기, DEVIEW 2023**
https://deview.kr/2023/sessions/536

📐 TECHNICAL ARTICLES

[a.2] 머신러닝 어플리케이션을 위한 데이터 저장소 기술, **HYPERCONNECT Tech Blog**
https://hyperconnect.github.io/2022/07/11/data-stores-for-ml-apps.html

[a.1] **Event-driven Live-streaming Recommender System, HYPERCONNECT Tech Blog**
- (Original, Korean ver.) https://hyperconnect.github.io/2022/01/24/event-driven-recsys.html
- (English, Translated ver.) https://prev.github.io/posts/event-driven-recsys/

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