

Young Hyun Yoo

Software Engineer

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SUMMARY

Staff Engineer and AI Researcher with over 9 years of experience bridging the gap between scalable software systems and advanced Natural Language Processing. Proven expertise in full-stack development (Java/Spring, React) and LLM application development (LangChain, PyTorch). Published author at ACL 2024 with a strong track record of delivering mission-critical enterprise solutions, from billing systems to on-device AI agents.

TECHNICAL SKILLS

- **Languages:** Java, Python, C++, SQL, TypeScript, Shell Script
- **AI & ML:** PyTorch, HuggingFace, LangChain, LangGraph, RAG, LLM Integration
- **Backend & Cloud:** Spring (Boot, WebFlux, JPA, Security), AWS (ECS, EKS), Docker, Terraform, MySQL, Redis
- **Concepts & Methodologies:** System Architecture, DDD, TDD, CI/CD, RESTful API, PCI-DSS, Scrum

EXPERIENCE

- **Automatic Content Recognition — Samsung Electronics Co., Ltd.** Suwon, Korea
Staff Engineer Dec 2024 – Present
 - **System Cost Optimization:** Engineered a lightweight Game Detection algorithm and spearheaded infrastructure refactoring (Graviton migration, OneTBB removal), achieving an **8% reduction in cloud costs** and **54% improvement in memory efficiency**.
 - **Technical Leadership:** Unified engineering workflows across global RD centers and modernized the DevOps pipeline using AWS CDK and Conan. Filed a key patent on semantic video processing and established a robust RCA-based reliability framework.
- **Agentic AI Chatbot — Samsung Electronics Co., Ltd.** Suwon, Korea
Staff Engineer Mar 2024 – Nov 2024
 - **Conversational Recommendation Engine:** Architected a context-aware TV assistant using AWS Bedrock and LangGraph, enabling dynamic content discovery through multi-turn dialogue and personalized viewing history analysis.
- **Sentence Representation Learning Research — Hanyang University** Seoul, Korea
Researcher Jun 2022 – Feb 2024
 - **ACL 2024 Publication:** Lead author of *Hyper-CL*, introducing a Hypernetwork-based approach to condition sentence embeddings, significantly outperforming baselines in semantic retrieval tasks.
 - **Korean NLP Analysis:** Conducted extensive comparative analysis of unsupervised contrastive learning approaches, optimizing performance specifically for Korean language syntax (Published at HCLT 2022).
- **Billing Development — Samsung Electronics Co., Ltd.** Suwon, Korea
Engineer Nov 2016 – Mar 2022
 - **Architecture Migration:** Orchestrated the transition of the Buyer Portal from a legacy monolithic architecture to Microservices (MSA) using AWS ECS and Terraform, significantly improving scalability and deployment velocity.
 - **Full-Stack Leadership:** Spearheaded the modernization of the Content Partner (CP) and Buyer Portals, migrating legacy systems to a modern stack (React, Spring Boot, JPA) to enhance user experience and maintainability.
 - **Security & Compliance:** Re-architected core billing services to achieve PCI-DSS compliance and implemented 3DS2 standards to meet EU PSD2 regulations, ensuring secure global transaction processing.
 - **Testing Automation:** Established a robust automated integration test framework using SoapUI and Groovy, reducing regression defects and accelerating the QA cycle.
 - **Feature Engineering:** Developed complex subscription management features allowing real-time product changes for active users and integrated remote authentication flows between smartphones and Smart TVs.
- **BSP Development — Samsung Electronics Co., Ltd.** Suwon, Korea
Engineer Feb 2015 – Nov 2016

- **Kernel Engineering:** Enhanced system stability and debugging capabilities by porting the Ramdump feature to the Samsung Smart TV Linux kernel, enabling critical post-mortem analysis of system crashes.

- **Samsung Software Membership**

Undergraduate

Suwon, Korea

Feb 2013 – Feb 2015

- **Kernel Modification Project:** Engineered a custom Android kernel modification to virtualize smartphone peripherals (Camera, Speaker, Mic) as PC input devices via USB gadget drivers.
- **Award:** Recognized with the "Best Project of the Year" award for technical innovation and implementation quality.

EDUCATION

- **Hanyang University**

Seoul, Korea

Master of Science in Computer Science; GPA: 4.06/4.5

Mar 2022 – Feb 2024

- **Hongik University**

Seoul, Korea

Bachelor of Science in Computer Engineering; GPA: 3.5/4.5

Mar 2008 – Feb 2015

PUBLICATIONS

- **Young Hyun Yoo**, Jii Cha, Changhyeon Kim and Taeuk Kim, Hyper-CL: Conditioning Sentence Representations with Hypernetworks, *The 62nd Annual Meeting of the Association for Computational Linguistics (ACL 2024)*.
- **Young Hyun Yoo**, Kyumin Lee, Minjin Jeon, Jii Cha, Kangsan Kim, and Taeuk Kim, Comparison and Analysis of Unsupervised Contrastive Learning Approaches for Korean Sentence Representations, *The 34th Annual Conference on Human and Cognitive Language Technology (HCLT 2022)*.

ADDITIONAL INFORMATION

- **Achievements**

- Selected as a core talent by Samsung Core Talent Management (2022-2024)

- **Languages**

- English: Proficient, Korean: Native