

# Yeongbin Seo

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## Research Interest : NLP, ML

My research is focused on enhancing machine learning (ML) and NLP frameworks to build self-evolving AI. I aim to implement higher-order mental capabilities within AI, drawing inspiration from human cognition. For this reason, I conducted my first research on **continual knowledge learning**, which is essential in self-evolving AI. Moreover, I worked on **self-awareness** and hallucination prediction in LMs, which enables them to detect their own errors.

With research experiences, I came to believe that self-evolution requires improvement in the **architecture of LMs**. For example, to accelerate RL in LMs, I found that the LMs need goal-orientation (bidirectional attention) and faster generation speed, which motivated my research on **diffusion LMs**. Another bottleneck is the token-level granularity, which results in the long-horizon problem. Since compressing the granularity into concept-level could address this, I am currently working on **hierarchical LMs**. I'm also open to broader topics such as embodied agents, since embodiment is essential for defining the emotions and personality of an LM.

## Education

### Yonsei University

Seoul, South Korea

*M.S. in Artificial Intelligence*

- **Advisor:** Prof. Jinyoung Yeo, Prof. Jaehyung Kim

### Yonsei University

Seoul, South Korea

*B.S. in Educational Sciences*

- **Coursework:** Educational Psychology, Neuro-cognitive Psychology

## Publications

†= advisors

**Prior-based Noisy Text Data Filtering: Fast and Strong Alternative For Perplexity**

ICLR 2026  
main

*Yeongbin Seo*, Gayoung Kim, Jaehyung Kim <sup>†</sup>, Jinyoung Yeo <sup>†</sup>

[Paper]  [Code] 

**Fast and Fluent Diffusion Language Models via Convolutional Decoding and Rejective Fine-tuning**

NeurIPS 2025  
Spotlight (top 3.19%)

*Yeongbin Seo*, Dongha Lee <sup>†</sup>, Jaehyung Kim <sup>†</sup>, Jinyoung Yeo <sup>†</sup>

[Paper]  [Code] 

Featured in media 

**Train-Attention: Meta-Learning Where to Focus in Continual Knowledge Learning**

NeurIPS 2024  
main

*Yeongbin Seo*, Dongha Lee <sup>†</sup>, Jinyoung Yeo <sup>†</sup>

[Paper]  [Code] 

**Quantifying Self-Awareness of Knowledge in Large Language Models**

Under review in ARR

*Yeongbin Seo*, Dongha Lee <sup>†</sup>, Jinyoung Yeo <sup>†</sup>

[Paper]  [Code] 

## Featured in media

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- Research achievement on the diffusion language model (2025, [Total 9 media of South Korea](#)) [🔗](#)
- Leading the development of news recommendation system in Dong-A Ilbo (2023, [Journalists Association of Korea](#)) [🔗](#)

## Industrial Project Experience

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### LLM-Powered Development-Assistant Tool with LG Electronics 2024 – 2025

- Developed a developer assistance tool commissioned by LG Electronics with the following features: (1) Automated assessment of SRS (Software Requirement Specification) documents (2) Conversion of SRS documents into Test Cases (TC) (3) Conversion of Test Cases (TC) into code scripts
- Tools Used: Python, Langchain, Pytorch

### RAG based chatbot with Dong-A Ilbo (One of the legacy media) 2023

- Designed and developed “AskDonga”, a Retrieval-Augmented Generation (RAG)-based chatbot.
- Tools Used: Python, Langchain, Uvicorn, Faiss, Fastapi, AWS

### AI News Recommendation System with Dong-A Ilbo 2022

- [Featured in media](#) [🔗](#)
- Designed and developed an AI-based news recommendation system for the Dong-A Ilbo website.
- Tools Used: Python, SQL, redis, Nginx, AWS

## Skills

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**Languages:** Python, Java, JavaScript, C/C++

**Deep Learning Frameworks and Tools:** PyTorch, Langchain, BitsAndBytes

## Other Job Experience

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### Software Engineer

*Dong-A Ilbo*

*Seoul, South Korea*

*Jan 2023 – Aug 2024*

- Led the planning and development of AI services based on articles for Dong-A Ilbo, South Korea's top newspaper.

### News Journalist (Data Analysis Specialist)

*News1 → Yonhap News → Dong-A Ilbo*

*Seoul, South Korea*

*Dec 2018 – Jan 2023*

- Worked as a journalist for major South Korean media outlets, News1, Yonhap News and Dong-A Ilbo.
- Dong-A Ilbo is one of the most prestigious media organizations in Korea ([Wikipedia](#) [🔗](#)).
- Specialized in statistical analysis articles while covering mainly the Ministry of Economy and Finance, Statistics Korea, and the financial investment industry.

### Rock Band Musician

*Band Seoyeongbin*

*Seoul, South Korea*

*Jan 2015 – Dec 2017*

- Leader, guitarist, and composer of the underground rock band “Band Seoyeongbin”, a three-member group active in underground clubs of Hongdae.

## Other-Domain Publications and Awards

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### A Research Report on Korean Employment Statistics Analysis

*2020, 2022*

- “Estimation and Analysis of Full-Time Employment”, [KERI Brief, no. 20-02, 2020](#) [🔗](#)
- “Changes in employment as seen by full-time equivalent employees”, [KERI Insight, no. 22-01, 2022](#) [🔗](#)
- Both are co-authored with Prof. Ki-seong Park (Department of Economics, Sungshin University)
- [Korea Economic Research Institute \(KERI\)](#) [🔗](#) is one of the most prestigious economic policy think tanks in Korea.

### Awarded from Big Data Analysis Competition by Statistics Korea

*2019*

- Data analysis on the consumption behaviors of Korean women, titled “Kim Ji-young Born in '92, '82, '72, '62, '52”.
- Among 141 teams, only seven received awards. The competition was held by [Statistics Korea](#) [🔗](#).