

# Seojin Kim

✉ seojinkim@kaist.ac.kr

📍 Daejeon, South Korea

🐙 sjiinkim

🌐 sjiinkim

## Education

**KAIST Kim Jaechul Graduate School of AI**, Artificial Intelligence

- KV cache
- State Space Models

Daejeon, South Korea  
Sept 2024 – present

**Yonsei University**, Applied Statistics and Computer Science

- Honors in 2020 spring semester (awarded to top 10 % of the students)
- Honors in 2024 spring semester (awarded to top 10 % of the students)

Seoul, South Korea  
Mar 2020 – Aug 2024

## Experience

**BigDyl**, Graduate Researcher

Graduate Researcher at BigDyl, a research group at KAIST, advised by Noseong Park.

- Efficient Language Modeling (KV cache, State Space Models)
- Time Series Analysis
- Recommendation System

Daejeon, South Korea  
Sept 2024 – present  
1 year 6 months

**Minds n Company (now GenOn)**, Data Scientist Intern

Data Scientist Intern at Minds n Company, a startup company in Seoul, South Korea.

- Project: AI Banker (LLM Agent) project at Woori Bank
- Skills: Langchain, Natural Language Generation

Seoul, South Korea  
Dec 2023 – Feb 2024  
2 months

**Ecube Labs**, Data Analyst Intern

Data Analyst Intern at Ecube Labs, a startup company in Seoul, South Korea.

- Project: Haulla call data analysis & referral marketing project
- Skills: Data Analytics with Python

Seoul, South Korea  
Dec 2021 – Jan 2022  
2 months

## Awards

**2023 Yonsei Big Data Analysis Contest**

2023

2nd place: Verification of AlleyWay Consulting and presentation of Growth Plans with LightGBM

Seojin Kim, Soyeon Shin, Yunseo Choi

[www.nobelprize.org/prizes/physics/1921/einstein/biographical](https://www.nobelprize.org/prizes/physics/1921/einstein/biographical)

**2021 Traditional Culture Youth Startup Idea Contest**

2021

Project: Moon-we: Interactive Matchmaking Platform for Collaboration between Intangible Cultural Properties-Company-Consumer and Crowdfunding Related to Intangible Cultural Properties

Seojin Kim, Jeonghyun Park, Honghee Na, Jaehwan Lee

## Publications

**Long-term Time Series Forecasting based on Decomposition and Neural Ordinary Differential Equations**

Proposes LTSF-DNODE, combining time-series decomposition with neural ODEs for long-term forecasting, improving over baselines on real-world datasets.

Seonkyu Lim, Jaehyeon Park, Seojin Kim\*, Hyowon Wi, Haksoo Lim, Jinsung Jeon, Jeongwhan Choi, Noseong Park

[doi.ieeecomputersociety.org/10.1109/BigData59044.2023.10386388](https://doi.ieeecomputersociety.org/10.1109/BigData59044.2023.10386388)

### **Addressing Prediction Delays in Time Series Forecasting: A Continuous GRU Approach with Derivative Regularization**

Introduces a continuous-time GRU (neural ODE) with time-derivative regularization to mitigate prediction delay in forecasting.

Sheo Yon Jhin, Seojin Kim, Noseong Park

[doi.org/10.1145/3637528.3671969](https://doi.org/10.1145/3637528.3671969)

### **Mitigating Over-Smoothing in Mamba2 via Spectral Domain Analysis**

Analyzes Mamba2 in the spectral domain and proposes a high-frequency enhancement method to reduce over-smoothing.

Seojin Kim, Yehjin Shin, Noseong Park

[openreview.net/forum?id=r08kqzrito](https://openreview.net/forum?id=r08kqzrito)

### **Graph Signal Processing Meets Mamba2: Adaptive Filter Bank via Delta Modulation**

Reinterprets Mamba2 as an adaptive filter bank and proposes a hierarchical framework inspired by graph signal processing.

Yehjin Shin, Seojin Kim, Noseong Park

[openreview.net/forum?id=cH0OxmfdL](https://openreview.net/forum?id=cH0OxmfdL)

### **TV-Rec: Time-Variant Convolutional Filter for Sequential Recommendation**

Proposes time-variant convolutional filters for sequential recommendation to better capture temporal interactions while improving efficiency.

Yehjin Shin, Jeongwhan Choi, Seojin Kim, Noseong Park

[arxiv.org/abs/2510.25259](https://arxiv.org/abs/2510.25259)

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Reinterprets Mamba2 as an adaptive filter bank and proposes a hierarchical framework inspired by graph signal processing.

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[openreview.net/forum?id=w0XhHcXfKv](https://openreview.net/forum?id=w0XhHcXfKv)

## **Languages**

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### **Korean**

Native speaker

### **English**

Fluent

## **Interests**

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**Artificial Intelligence**