# Seongwoon Jo

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## INTERESTS

Reinforcement Learning, Reasoning, Physical AI

## EDUCATION

**Ulsan National Institute of Science and Technology (UNIST)** Ulsan, Korea
*B.S. in Computer Science and Engineering (major) and Industrial Engineering (minor)* Mar. 2021 – Present

## PUBLICATIONS

**SharpDraft: Accelerating Long-Context Speculative Decoding with Cardinality-Aware Query Scaling**
Jeonghoon Park*, **Seongwoon Jo***, Jongwon Lee*, Taesik Gong ** Equal contribution*
arXiv:2610.05106 *Under review at ICLR 2027*

## RESEARCH EXPERIENCE

**AI-Cognition Optimization with Reinforcement Learning Lab, UNIST** Ulsan, Korea
*Undergrad Research Intern (Advisor: Prof. Youngsoo Jang)* Oct. 2026 – Present

- Investigating efficient LLM reasoning.

**Ubiquitous AI Lab, UNIST** Ulsan, Korea
*Undergrad Research Intern (Advisor: Prof. Taesik Gong)* Jan. 2026 – Sep. 2026

- Investigated efficiency techniques for vision-language-action (VLA) models and GUI agents.
- Co-developed SharpDraft for long-context speculative decoding with training-free query scaling.

**Integrated Circuits and Systems Lab, UNIST** Ulsan, Korea
*Undergrad Research Intern (Advisor: Prof. Jongeun Lee)* Jul. 2025 – Sep. 2025

- Analyzed latency per operation in dynamic-quantization for Large Language Models (LLMs).
- Implemented Triton kernel for LayerNorm-kernel fusion to optimize performance.

**Financial Engineering Lab, UNIST** Ulsan, Korea
*AICP Program Collaborator (Advisor: Prof. Yongjae Lee)* Apr. 2022 – Dec. 2022

- Collected news data through web-crawling and performed data preprocessing.
- Fine-tuned KB-AIBERT model for sentiment analysis on financial news data.

## PROFESSIONAL EXPERIENCE

**ARI.AI Corp.** Ulsan, Korea
*AI Researcher (Advisor: Prof. Jooyeon Kim)* Feb. 2025 – Nov. 2025

- Trained Nano-GPT based Transformer models from scratch. Adapted custom KV-caching.
- Implemented a world simulation model for the *Valorant* game domain; collaboration with ETRI.

**Trip Builder Corp.** Ulsan, Korea
*Data Engineer and AI Researcher* Jul. 2022 – Mar. 2023

- Conducted data crawling and processing for travel data.
- Fine-tuned KoBERT/KoGPT models for sentiment analysis.

## PATENT APPLICATIONS

**Method and Apparatus for Query Scaling Based on Competing Key Count**
*Taesik Gong, Jeonghoon Park, Seongwoon Jo, Jongwon Lee*
Korean Patent Application No. 10-2026-0227032 Filed November 13, 2026

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## HONORS & AWARDS

- **Gold Prize (2nd Place)**, 2nd KAIST-POSTECH-UNIST Data Science Competition Oct. 2022 – Dec. 2022
- Participation Prize, 1st UNIST-POSTECH-KAIST Data Science Competition Oct. 2021 – Dec. 2021
- **Top Prize (Ministry of Science and ICT)**, U-Challenge Festival 2021 Mar. 2021 – Dec. 2021

## TEACHING EXPERIENCE

- **Tutor**, Introduction to AI Programming I, UNIST Oct. 2022 – Dec. 2022
- **Tutor**, General Physics I, UNIST Apr. 2022 – Jul. 2022
- **Tutor**, Ulju The Dream Campus – Taught Python to middle school students May 2022 – Dec. 2022
- **Instructor**, Midam Scholarship Foundation & Aramco Korea Ulju-gun Education Program 2021 – 2022

## SKILLS

- **Programming Languages:** C, C++, Python, R, HTML/CSS/JS, React
- **Software & Frameworks:** PyTorch, Tensorflow, Scikit-learn, JAX, Triton