Wooseok Seo

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Seoul, Korea

Research Interests

I am interested in pushing the boundaries of *foundational models* through better **evaluation frameworks** or effective **post-training**. I am currently excited about improving language models to utilize tools or external knowledge sources to solve challenging problems, with a focus on agentic frameworks such as deep research agents. I am also interested in scaling effective synthetic data for model generalization, or designing reward signals for RL.

Education

Yonsei University — Seoul, Korea
Ph.D. in Artificial Intelligence — *Mar 2025 – Feb 2030 (Exp.)*
Advisor: Prof. Youngjae Yu

Yonsei University — Seoul, Korea
B.S. in Nano Science and Engineering — *Mar 2020 – Feb 2025*

Research Experience

Microsoft — Redmond, WA (Remote)
Research Intern @ Copilot Team — *Mar 2026 - Jun 2026 (Exp.)*
Mentor: Khanh Nguyen

LG AI Research — Seoul, Korea
Research Intern @ EXAONE Lab — *Sep 2025 - Feb 2026*
Mentor: Seokhee Hong

Seoul National University, PI LAB — Seoul, Korea
Visiting Researcher — *Sep 2025 - Current*

MAUM.AI — Seoul, Korea
Research Scientist @ WoRV (World model for Robotics and Vehicle control) Team — *Jan 2024 - May 2024*

Yonsei University, MIR Lab — Seoul, Korea
Undergraduate Research Intern — *Sep 2023 - Feb 2025*
Advisor: Prof. Youngjae Yu

Publication

[C]: Conference, [P]: Preprint, [T]: Tech Report, * denotes equal contribution.

[P3] Instruction Following with Composable Constraints
Wooseok Seo, Sangyeon Yoon, Valentina Pyatkin, Sunkyoung Kim, Yongil Kim, Heuiyeen Yeen, Youngjae Yu, Seokhee Hong
TLDR; We scale complex instruction following data with automatic composition algorithms, creating challenging benchmarks and improving LLMs' instruction following capabilities through RL.
Under Review, Work done during internship at LG AI Research.

[T2] EXAONE 4.5 Technical Report
LG AI Research
TLDR; We present EXAONE-4.5, Korea's leading Vision-Language Model. I contribute as a member of the post-training team, specifically working on synthetic data for reasoning.
Technical Report, Paper, HuggingFace

[P2] BenchPreS: A Benchmark for Context-Aware Personalized Preference Selectivity of Persistent-Memory LLMs
Sangyeon Yoon, Sunkyoung Kim, Hyesoo Hong, Wonje Jeung, Yongil Kim, **Wooseok Seo**, Heuiyeen Yeen, Albert No
TLDR; We introduce BenchPreS to evaluate whether LLMs appropriately apply or suppress memory-based user preferences,

showing that even frontier models systematically over-apply personalization.
Under Review, Paper

[T1] K-EXAONE Technical Report
LG AI Research
TLDR; We present K-EXAONE-236B-A23B, the best reasoning model in Korea. I contribute as a member of the post-training team, specifically working on synthetic data for reasoning and model evaluation.
Technical Report, Paper, HuggingFace

[C2] Verifying the Verifiers: Unveiling Pitfalls and Potentials in Fact Verifiers
Wooseok Seo*, Seungju Han*, Jaehun Jung, Benjamin Newman, Seungwon Lim, Seungbeen Lee, Ximing Lu, Yejin Choi, Youngjae Yu
TLDR; We systematically detect ambiguous & mislabeled examples in fact-verification benchmarks and introduce Clearfacts and Grayfacts, along with an SOTA 8B fact verifier and insights on building better fact verifiers.
COLM 2025, Paper, Code

[C1] V.I.P.: Iterative Online Preference Distillation for Efficient Video Diffusion Models
Jisoo Kim, **Wooseok Seo**, Junwan Kim, Seungho Park, Sooyeon Park, Youngjae Yu
TLDR; We integrate DPO and SFT loss for distillation to build an efficient video diffusion model, with an automatic pair curation pipeline and outperform the teacher only with the synthetic data generated from the teacher itself.
ICCV 2025, Paper

[P1] Layout-and-Retouch: A Dual-stage Framework for Improving Diversity in Personalized Image Generation
Wooseok Seo*, Kangyeol Kim*, Sehyun Nam, Bodam Kim, Suhyeon Jeong, Wonwoo Cho, Jaegul Choo, Youngjae Yu
TLDR; We use a two-stage approach for personalized T2I generation, to first draw the context with step-blended denoising and enhance the context with multi-source attention swapping.
Preprint, Paper

Academic Services

Reviewer

ACL ARR *2025*
COLM *2025,2026*

Awards and Honors

Thinking Machines Lab

$5k Research Grant for research on synthetic data *2025*