Hyeongu Yun

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SUMMARY

An AI Scientist at LG AI Research with over 2 years of hands-on experience in developing and fine-tuning large language models (LLMs) using cutting-edge techniques.

My expertise spans the entire pipeline of generative language model development, from curating massive corpora for pre-trained LLMs to aligning with human preference for instruction fine-tuned LLMs, enabling models to optimally meet user expectations.

Since 2024, I have led a compact squad specializing in instruction fine-tuning and preference fine-tuning.

EDUCATION

Seoul National University   Seoul, Republic of Korea
B.S. in Department of Electrical and Computer Engineering   *Feb 2015*

Seoul National University   Seoul, Republic of Korea
Ph.D. in Department of Electrical and Computer Engineering   *Aug 2022*
- Advisor: Kyomin Jung
- Dissertation Title: Hierarchical Context Encoder for Natural Language Processing via Leveraging Contextual Information and Memory Attention

WORK EXPERIENCE

EXAONE Lab. @ LG AI Research   Dec. 2023 - Current
Lead of a compact squad focused on LLM instruction/alignment tuning
- Forging raw data collection to instruction/alignment fine-tuning data mixture
- Enhancing the diversity and quality of instruction/alignment fine-tuning data mixture
- Validating and developing cutting-edge algorithms in supervised fine-tuning and preference fine-tuning
- Contributing as a core team member to the release of EXAONE 3.0 and EXAONE 3.5

EXAONE Lab. @ LG AI Research   Jul. 2022 - Dec. 2023
Develop a bi-lingual LLM
- Curating extensively massive corpora from various sources for LLMs
- Fine-tuning LLMs toward instruction following ability
- Designing suitable benchmarks for LLMs with specific objectives including human-preference

PROJECTS

EXAONE-3.5-Instruct; 2.4B, 7.8B, 32B   Aug. 2024 - Dec. 2024
- Demo: https://huggingface.co/spaces/LGAI-EXAONE/EXAONE-3.5-Instruct-Demo
- High performance on instruction-following tasks in both English and Korean; Supporting up to 32k context length
- Led the overall process of instruction fine-tuning, including data curation, model training, and evaluation.

EXAONE-3.0-7.8B-Instruct   Dec. 2023 - Aug. 2024
- Huggingface Model: https://huggingface.co/LGAI-EXAONE/EXAONE-3.5-32B-Instruct
- Competitive benchmark performance against other state-of-the-art open models of similar size
- Led the overall process of instruction fine-tuning, including data curation, model training, and evaluation.

EXAONE Universe   Jan. 2023 - Nov. 2023
- a RAG-like system designed for specific expert domain
- Curated data for pre-training and instruction fine-tuning.

EXAONE   Jul. 2022 - Dec. 2022
- pre-trained bi-lingual Large Language Model
- Conducted model evaluation and handled prompt engineering.

Publications

- **EXAONE 3.5: Series of Large Language Models for Real-world Use Cases** — arxiv preprint
  LG AI Research
  https://arxiv.org/abs/2412.04862

- **EXAONE 3.0 7.8B Instruction Tuned Language Model** — arxiv preprint
  LG AI Research
  https://arxiv.org/abs/2408.03541

- **ListT5: Listwise Reranking with Fusion-in-Decoder Improves Zero-shot Retrieval** — ACL 2024
  Soyoung Yoon, Eunbi Choi, Jiyeon Kim, Yireun Kim, Hyeongu Yun, and Seung-won Hwang
  https://arxiv.org/abs/2402.15838

- **Investigating the effectiveness of task-agnostic prefix prompt for instruction following** — AAAI 2024
  Seonghyeon Ye, Hyeonbin Hwang, Sohee Yang, Hyeongu Yun, Yireun Kim, and Minjoon Seo
  https://arxiv.org/abs/2302.14691

- **PR-MCS: Perturbation Robust Metric for MultiLingual Image Captioning** — Findings of EMNLP 2023
  Yongil Kim, Yerin Hwang, Hyeongu Yun, Seunghyun Yoon, Trung Bui, and Kyomin Jung
  https://arxiv.org/abs/2303.08389

- **Gated Relational Target-aware Encoder and Local Context-aware Decoder for Target-oriented Opinion Words Extraction** — IEEE Access
  Taegwan Kang, Segwang Kim, Hyeongu Yun, Hwanhee Lee, Kyomin Jung
  https://ieeexplore.ieee.org/abstract/document/9982601

- **Improving Context-Aware Neural Machine Translation Using Self-Attentive Sentence Embedding** — AAAI 2020
  Hyeongu Yun, Yongkeun Hwang, Kyomin Jung
  https://ojs.aaai.org/index.php/AAAI/article/view/6494

Technical Skills

Languages: Python, C/C++
Preferred Frameworks: PyTorch, DeepSpeed, TRL, Accelerator, NeMo-Aligner