Thanh-Long V. Le

Email LinkedIn Google Scholar Homepage

Education

Korea Advanced Institute of Science and Technology (KAIST AI) **Feb. 2025 – Feb. 2027**
M.S. in Artificial Intelligence *Seoul, South Korea*

Korea Advanced Institute of Science and Technology (KAIST) **Sep. 2019 – Feb. 2024**
B.S. in Computer Science and Artificial Intelligence *Daejeon, South Korea*

- GPA: **3.98/4.30**
- Graduated **Magna Cum Laude** (Ranked **10** in School of Computing)
- Minor in Business and Technology Management

Research Experience

Machine Learning and Intelligence Lab, KAIST AI **Feb. 2025 – Present**
Gradute Researcher, Advised by Prof. Eunho Yang *Seoul, South Korea*

- Research interests: LLM post-training in general, including LLM reasoning and alignment through reinforcement learning/preference optimization.
- Currently focusing on augmenting RLVR with various dense learning signal to improve the reasoning ability of LLM.
- Developed a sequence-based mixture-of-experts model for code infilling.

Networking and Mobile Systems Lab, KAIST **May. 2023 – Sep. 2024**
Undergraduate Researcher, Advised by Prof. Sung-Ju Lee *Daejeon, South Korea*

- Conducted research on natural language processing, federated learning and human-computer interaction.
- Actively participated in the Exphrase project – an AI-based paraphrasing system equipped with five supplementary features: AI Translation, AI Confidence Score, AI Explanation, Example Usages, Statistics.
- Addressed label deficiency in federated learning by implementing semi-supervised learning with adaptive thresholding and sharpness-aware regularization.

Publications

No Prompt Left Behind: Exploiting Zero-Variance Prompts in LLM Reinforcement Learning via Entropy-Guided Advantage Shaping
Thanh-Long V. Le, Myeongho Jeon, Kim Vu, Viet Lai, Eunho Yang
Under review at *International Conference on Learning Representations (**ICLR**) 2026*

Design Opportunities for Explainable AI Paraphrasing Tools
Yewon Kim, **Thanh-Long V. Le**, Donghwi Kim, Mina Le, Sung-Ju Lee
*Conference on Designing Interactive Systems (**DIS**) 2025*

$(FL)^2$: Overcoming Few Labels in Federated Semi-Supervised Learning
Seungjoo Lee, **Thanh-Long V. Le**, Jaemin Shin, Sung-Ju Lee
*Conference on Neural Information Processing Systems (**NeurIPS**) 2024*

Work Experience

Luxoft – BMW Korea **Mar. 2024 – Dec. 2024**
C++ Software Engineer *Seoul, South Korea*

- Developed and optimized features for map provision application to enhance the accuracy and reliability of ADAS (Advanced Driving Assistance System) functionalities of BMW vehicles.
- Detected, analyzed, and prepared reports and fixes for vehicle anomalies by leveraging software logs and simulations.

Coc Coc Company Ltd. **Sep. 2021 – Oct. 2022**
Software Engineer *Hanoi, Vietnam*

- Maintained the functionality of three key components of Coc Coc Search's backend system – compositor, knowledge graph, and search engine.
- Conducted a full codebase refactoring of compositor system to eliminate potential bugs and technical debt.
- Utilized SQL to collect and analyze usage data of Coc Coc Translate over the course of a year, providing insights to assist managers in decision making.

Projects

Improve the Robustness of QA System to Entity Renaming **Sep. 2022 – Dec. 2022**

- Conducted experiments to evaluate and compare the robustness of BERT, RoBERTa, and SpanBERT against entity renaming on machine reading comprehenstion task across five distinct datasets.
- Proposed a novel improvement method named Anonymized Training with optional Anonymized Inference
- Achieved a substantial mitigation in performance drop from over 30% to less than 5% for SpanBERT against entity renaming, with BERT and RoBERTa's performance drop being further reduced.

Semi-Supervised Semantic Segmentation with Cross-Consistency Training **Sep. 2022 – Dec. 2022**

- Replicate the findings presented in the original paper by Ouali et al, which focus on semi-supervised semantic segmentation using a shared encoder and multiple decoder models on the PASCAL VOC dataset.
- Conducted additional experiments with different encoder backbone, generative adversarial networks, and temporal ensembling, resulting in an improved mIoU score of 73.5 compared to the paper's result of 73.2.

Contrastive Learning for Price Match Guarantee **Mar. 2022 – Jun. 2022**

- Applied deep learning techniques to solve the product matching problem by utilizing image and title data.
- Implemented and integrated the triplet loss function into the training of ResNet18, resulting in a significant improvement of the model's validation F1 score from 60% to 71%.
- Achieved the highest validation F1 score of 72.46% for images matching and 68.27% for titles matching.

Honors and Awards

Qualcomm-KAIST Innovation Award (2023): Winner.
KAIST Dean's List (2020): Top 3% students of the department.
KAIST International Undergraduate Scholarship (2019): Full-ride Scholar.
Deakin Vice-Chancellor's International Scholarship (2019): Recipient.
Vietnam National Mathematical Olympiad (2018): Silver medal.

Technical Skills

Languages: C++, C, Python, Java, Go, SQL, HTML, CSS, JavaScript.
Technologies/Frameworks: PyTorch, Jax, Haliax, Levanter, Linux, Git, Vim, Bazel, Bash Scripting, MySQL.
Certificates: 8.0 in IELTS, 1500 in SAT, 800 in SAT Math Level 2, 800 in SAT Physics.