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### RESEARCH INTERESTS

I am an AI developer who wants to make the world a better place through artificial intelligence. I believe that AI can play a significant role in various fields, such as saving lives and increasing work efficiency. When I first started studying AI, I couldn't have imagined such a future, but now, with the development of technologies like LLM and MLLM, AI is able to perform many tasks that only humans could do. I am thrilled that we are getting closer to the ideal AI I have envisioned. This naturally led me to take an interest in LLM, and I am currently studying and working with it. I am continuously striving to gain diverse experiences to become an AI researcher and engineer who contributes to making the world a better place. Here are some topics I am interested in:

- Generative model
- LLM, MLLM tuning (including PEFT) and serving
- Healthcare
- Document understanding

### SKILLS

Programming: Python, Java (Spring), JavaScript, FastAPI Frameworks/Tools: PyTorch, PyTorch Lightning, LLM Training & Serving (Triton-client, TensorRT-LLM, TensorRT-LLM Backend, vLLM, ollama), PEFT, RAG, Docker, Git, Elasticsearch (ELK) Environment Preferences: Linux, Mac

## EDUCATION

Ph.D. Intergrated Course, Graduate school of AI, KAIST
M.S., Aerospace Engineering, KAIST
B.S., Aerospace Engineering, KAIST
\*Double major: Industrial Design
Sep. 2021 - present (leave of absence)
Sep. 2019 - Sep. 2021
Mar. 2015 - Sep. 2019

#### Work

- Lomin ML Team (전문연구요원)
  - ★ LLM training & serving.
  - \* BentoML & and Triton serving.
  - \* Document detection model enhancement.
  - \* Developed zero-shot document classifier.
  - $\star$  Developed end-to-end document OCR model.
  - \* Autoscan model serving.

Sep. 2021 - Apr. 2023

# • IBRICKS AI Tech (전문연구요원)

Sep. 2021 - Apr. 2023

- \* Improved the performance of the document embedding model.
- ★ Maintained a document analysis product built in Java.
- \* Open-domain chat system modeling.
- \* Developed document extractive summarization language model.
- \* Language model lightweighting.
- $\star$  Developed Text augmentation model based on GAN.
- \* Developed online commercial advertisement OCR model.
- \* Developed document inverted indexing.

# RESEARCH CONTRIBUTION

- 2025 PC Member, Association for the Advancement of Artificial Intelligence (AAAI)
- 2023, 2024 PC Member, Association for the Advancement of Artificial Intelligence (AAAI)
- 2023 Industry Track Committee, Empirical Methods in Natural Language Processing (EMNLP)
- 2023 PC Member, Empirical Methods in Natural Language Processing (EMNLP)
- 2023 PC Member, Association for Computational Linguistics (ACL)

### Publication

- (preprint) End-to-end Documents Information Extraction and Detection using Documents Recognition-Detection Transformer
  - J.M. Lee\*, I.P. Hong\*, J.W. Kim\* (\*: equal contribution)
- Unsupervised Text Embedding Space Generation Using Generative Adversarial Networks for Text Synthesis
  - J.M. Lee and T.B. Ha
  - Northern European Journal of Language Technology (NEJLT), 2023
- Open-Domain Dialogue Generation using Pre-trained Language Models in Korean
  - **J.M. Lee\***, H.S. Kim\*, T.B. Ha, H.J. Park and Y.M. Ahn (\*: equal contribution)
  - Conference of Korea Computer Congress, 2022
- Laser structural training, artificial intelligence-based acoustic emission localization and structural/noise signal distinguishment in a thick FCEV fuel tank
- **J.M. Lee**, Y.S. Choi, and J.R. Lee International Journal of Hydrogen Energy (IJHE), 2022

### Conference

- Acoustic emission localization on composite hydrogen storage tank and feature analysis of acoustic emission and noise signals **J.M. Lee** and J.R. Lee
  - Conference of The Korean Society for Aeronautical and Space Sciences (KSAS), 2021
- Nondestructive Testing and Structural Health Monitoring for Pressure Vessels of FCEV using Guided-Wave Ultrasonic Propagation Imager Y.S. Choi, **J.M. Lee** and J.R. Lee
- Conference of The Korean Society for Composite Materials (KSCM), 2020
- Structural Health Monitoring of Hydrogen Pressure Vessel using Artificial Intelligence

**J.M. Lee**, Y.S. Choi, and J.R. Lee Conference of The Korean Society for Nondestructive Testing (KSNT), 2020 (**Award**)