Hyeonseok Moon

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Research Area

- Language Resource
- Benchmark
- Large Language Model
- Language Generation
- Model Evaluation
- Data Evaluation
- Machine Translation
- Data Engineering

Education

Korea University (*Seoul, Republic of Korea*) **2021.03 – 2026.02(expected)**
Ph.D.
Major in Computer Science and Engineering - Advisor: Prof. Heuiseok Lim

Korea University (*Seoul, Republic of Korea*) **2015.03 – 2021.02**
Bachelor of Science and Engineering
Major in Mathematics and Artificial Intelligence (Double Majors) - Advisor: Prof. Euisung Park

Selected Publications

International Conference

Metric Calculating Benchmark: Complicate Instruction Following Benchmark for Large Language Models **2025**
Hyeonseok Moon, Seongtae Hong, Jaehyung Seo, Heuiseok Lim
EMNLP 2025

LimaCost: Data Valuation for Instruction Tuning of Large Language Models **2025**
Hyeonseok Moon, Jaehyung Seo, Seonmin Koo, Jinsung Kim, Young-kyoung Ham, jiwon moon, Heuiseok Lim
EMNLP 2025 Findings

The Impact of Negated Text on Hallucination with Large Language Models **2025**
Jaehyung Seo, Hyeonseok Moon, Heuiseok Lim
EMNLP 2025

Call for Rigor in Reporting Quality of Instruction Tuning Data **2025**
Hyeonseok Moon, Jaehyung Seo, Heuiseok Lim
ACL 2025

Cross-Lingual Optimization for Language Transfer in Large Language Models **2025**
Jungseob Lee, Seongtae Hong, Hyeonseok Moon, Heuiseok Lim
ACL 2025

Semantic Aware Linear Transfer by Recycling Pre-trained Language Models for Cross-lingual Transfer **2025**
Seungyoon Lee, Seongtae Hong, Hyeonseok Moon, Heuiseok Lim
ACL 2025 Findings

FLEX: A Benchmark for Evaluating Robustness of Fairness in Large Language Models **2025**
Dahyun Jung, Seungyoon Lee, Hyeonseok Moon, Chanjun Park, Heuiseok Lim
NAACL 2025 Findings

MIRAGE: A Metric-Intensive Benchmark for Retrieval-Augmented Generation Evaluation **2025**
Chanhee Park, Hyeonseok Moon, Chanjun Park, Heuiseok Lim
NAACL 2025 Findings

Find the Intention of Instruction: Comprehensive Evaluation of Instruction Understanding for Large Language Models **2025**
Hyeonseok Moon, Jaehyung Seo, Seungyoon Lee, Chanjun Park, Heuiseok Lim
NAACL 2025 Findings

MIGRATE: Cross-Lingual Adaptation of Domain-Specific LLMs through Code-Switching and Embedding Transfer **2025**
Seongtae Hong, Seungyoon Lee, Hyeonseok Moon, Heuiseok Lim
COLING 2025

Leveraging Pre-existing Resources for Data-Efficient Counter-Narrative Generation in Korean **2024**
Seungyoon Lee, Chanjun Park, DaHyun Jung, Hyeonseok Moon, Jaehyung Seo, Sugyeong Eo, Heuiseok Lim
LREC-COLING 2024

Detecting Critical Errors Considering Cross-Cultural Factors in English-Korean Translation **2024**
Sugyeong Eo, Jungwoo Lim, Chanjun Park, DaHyun Jung, Seonmin Koo, Hyeonseok Moon,
Jaehyung Seo, Heuiseok Lim
LREC-COLING 2024

Translation of Multifaceted Data without Re-Training of Machine Translation Systems **2024**
Hyeonseok Moon, Seungjun Lee, Seongtae Hong, Seungjum Lee, Chanjun Park, Heuiseok Lim
EMNLP 2024 Findings

Length-aware Byte Pair Encoding for Mitigating Over-segmentation in Korean Machine Translation **2024**
Jungseob Lee, Hyeonseok Moon(*equal contribution*), Seungjun Lee, Chanjun Park, Sugyeong Eo,
Hyunwoong Ko, Jaehyung Seo, Seungyoon Lee, Heuiseok Lim
ACL 2024 Findings

Generative Interpretation: Toward Human-Like Evaluation for Educational Question-Answer Pair Generation **2024**
Hyeonseok Moon, Jaewook Lee, Sugyeong Eo, Chanjun Park, Jaehyung Seo, Heui-Seok Lim
EACL 2024 Findings

Hyper-BTS Dataset: Scalability and Enhanced Analysis of Back TranScription (BTS) for ASR Post-Processing **2024**
Chanjun Park, Jaehyung Seo, Seolhwa Lee, Junyoung Son, Hyeonseok Moon, Sugyeong Eo,
Chanhee Lee, Heui-Seok Lim
EACL 2024 Findings

Leveraging Pre-existing Resources for Data-Efficient Counter-Narrative Generation in Korean **2024**
Seungyoon Lee, Chanjun Park, DaHyun Jung, Hyeonseok Moon, Jaehyung Seo, Sugyeong Eo, Heui-Seok Lim
LREC-COLING 2024

Detecting Critical Errors Considering Cross-Cultural Factors in English-Korean Translation **2024**
Sugyeong Eo, Jungwoo Lim, Chanjun Park, Dahyun Jung, Seonmin Koo, Hyeonseok Moon,
Jaehyung Seo, Heui-Seok Lim
LREC-COLING 2024

CHEF in the Language Kitchen: A Generative Data Augmentation Leveraging Korean Morpheme Ingredients **2023**
Jaehyung Seo, Hyeonseok Moon, Jaewook Lee, Sugyeong Eo, Chanjun Park, Heui-Seok Lim
EMNLP 2023

KEBAP: Korean Error Explainable Benchmark Dataset for ASR and Post-processing **2023**
Seonmin Koo, Chanjun Park, Jinsung Kim, Jaehyung Seo, Sugyeong Eo, Hyeonseok Moon, Heui-Seok Lim
EMNLP 2023

Post-hoc Utterance Refining Method by Entity Mining for Faithful Knowledge Grounded Conversations **2023**
Yoonna Jang, Suhyune Son, Jeongwoo Lee, Junyoung Son, Yuna Hur, Jungwoo Lim, Hyeonseok Moon,
Kisu Yang, Heuiseok Lim
EMNLP 2023

PEEP-talk: A situational dialogue-based chatbot for English education **2023**
Seungjun Lee, Yoonna Jang, Chanjun Park, Jungseob Lee, Jaehyung Seo, Hyeonseok Moon, Sugyeong Eo,
Seounghoon Lee, Bernardo Yahya, Heui-Seok Lim
ACL 2023 - Demo

Towards diverse and effective question-answer pair generation from children storybooks **2023**
Sugyeong Eo, Hyeonseok Moon(*equal contribution*), Jinsung Kim, Yuna Hur, Jeongwook Kim, Songeun Lee, Changwoo Chun, Sungsoo Park, Heuiseok Lim
ACL 2023 Findings

Improving Formality-Sensitive Machine Translation Using Data-Centric Approaches and Prompt Engineering **2023**
Seungjun Lee, Hyeonseok Moon, Chanjun Park, Heuiseok Lim
IWSLT 2023

QUAK: A synthetic quality estimation dataset for korean-english neural machine translation **2022**
Sugyeong Eo, Chanjun Park, Hyeonseok Moon, Jaehyung Seo, Gyeongmin Kim, Jungseob Lee, Heuiseok Lim
COILING 2022

A dog is passing over the jet? a text-generation dataset for korean commonsense reasoning and evaluation **2022**
Jaehyung Seo, Seounghoon Lee, Chanjun Park, Yoonna Jang, Hyeonseok Moon, Sugyeong Eo, Seonmin Koo, Heuiseok Lim
NAACL 2022 Findings

KU X upstage's submission for the WMT22 quality estimation: Critical error detection shared task **2022**
Sugyeong Eo, Chanjun Park, Hyeonseok Moon, Jaehyung Seo, HeuiSeok Lim
WMT 2022

Priming ancient Korean neural machine translation **2022**
Chanjun Park, Seolhwa Lee, Jaehyung Seo, Hyeonseok Moon, Sugyeong Eo, Heui-Seok Lim
LREC 2022

Empirical Analysis of Noising Scheme based Synthetic Data Generation for Automatic Post-editing **2022**
Hyeonseok Moon, Chanjun Park, Seolhwa Lee, Jaehyung Seo, Jungseob Lee, Sugyeong Eo, HeuiSeok Lim
LREC 2022

A Self-Supervised Automatic Post-Editing Data Generation Tool **2022**
Hyeonseok Moon, Chanjun Park, Sugyeong Eo, Jaehyung Seo, SeungJun Lee, Heuiseok Lim
ICML 2022 - DataPerf Workshop

BTS: Back TranScription for Speech-to-Text Post-Processor using Text-to-Speech-to-Text **2021**
Chanjun Park, Jaehyung Seo, Seolhwa Lee, Chanhee Lee, Hyeonseok Moon, Sugyeong Eo, Heuiseok Lim
WAT2021 - ACL Workshop

Should we find another model?: Improving neural machine translation performance with one-piece tokenization method without model modification **2021**
Chanjun Park, Sugyeong Eo, Hyeonseok Moon, HeuiSeok Lim
NAACL 2021 - industry track

International Journal

Doubts on the reliability of parallel corpus filtering **2023**
Hyeonseok Moon, Chanjun Park, Seonmin Koo, Jungseob Lee, Seungjun Lee, Jaehyung Seo, Sugyeong Eo, Yoonna Jang, Hyunjoong Kim, Hyoung-gyu Lee, Heuiseok Lim
Expert Systems with Applications

PU-GEN: Enhancing generative commonsense reasoning for language models with human-centered knowledge **2022**
Jaehyung Seo, Dongsuk Oh, Sugyeong Eo, Chanjun Park, Kisu Yang, Hyeonseok Moon, Kinam Park, Heuiseok Lim
Knowledge-Based Systems

An empirical study on automatic post editing for neural machine translation **2021**
Hyeonseok Moon, Chanjun Park, Sugyeong Eo, Jaehyung Seo, Heuiseok Lim
IEEE Access

An automatic post editing with efficient and simple data generation method **2022**
Hyeonseok Moon, Chanjun Park, Jaehyung Seo, Sugyeong Eo, Heuiseok Lim
IEEE Access

Exploiting Hanja-based Resources in Processing Korean Historic Documents written by Common Literati **2024**
Hyeonseok Moon, Myunghoon Kang, Jaehyung Seo, Sugyeong Eo, Chanjun Park, Yeongwook Yang, Heuiseok Lim
IEEE Access

AI for patents: A novel yet effective and efficient framework for patent analysis **2022**
Junyoung Son, Hyeonseok Moon, Jeongwoo Lee, Seolhwa Lee, Chanjun Park, Wonkyung Jung, Heuiseok Lim
IEEE Access

Plain template insertion: korean-prompt-based engineering for few-shot learners **2022**
Jaehyung Seo, Hyeonseok Moon, Chanhee Lee, Sugyeong Eo, Chanjun Park, Jihoon Kim, Changwoo Chun, Heuiseok Lim
IEEE Access

Mimicking infants' bilingual language acquisition for domain specialized neural machine translation **2022**
Chanjun Park, Woo-Young Go, Sugyeong Eo, Hyeonseok Moon, Seolhwa Lee, Heuiseok Lim
IEEE Access

A survey on evaluation metrics for machine translation **2023**
Seungjun Lee, Jungseob Lee, Hyeonseok Moon, Chanjun Park, Jaehyung Seo, Sugyeong Eo, Seonmin Koo, Heuiseok Lim
Mathematics

Comparative analysis of current approaches to quality estimation for neural machine translation **2021**
Sugyeong Eo, Chanjun Park, Hyeonseok Moon, Jaehyung Seo, Heuiseok Lim
Applied Sciences

Return on Advertising Spend Prediction with Task Decomposition-Based LSTM Model **2021**
Hyeonseok Moon, Taemin Lee, Jaehyung Seo, Chanjun Park, Sugyeong Eo, Imatitikua D Aiyanyo, Jeongbae Park, Aram So, Kyoungwha Ok, Kinam Park
Mathematics

Word-level quality estimation for Korean-English neural machine translation **2022**
Sugyeong Eo, Chanjun Park, Hyeonseok Moon, Jaehyung Seo, Heuiseok Lim
IEEE Access

Collaborative Project

World Best LLM - with NC AI **2025.07 – now**
Supported by **National Research Foundation** - *Team Leader at Korea University*
- Supervise LLM training process and Evaluating trained LLMs
- Evaluation data curation. Evaluation dashboard management

LLM Assistant for Teaching Human Consultant **2024.07 – 2025.08**
Supported by **Creative Digital Lab** - *Project Manager at Korea University*
- Training Large Language Models with Data Curation
- Data augmentation with a few human-annotated labels

Legal Domain Vertical LLM **2024.07 – 2025.07**
Supported by **KT** - *Project Manager at Korea University*
- Training Large Language Models with Data Curation
- Data quality check for building domain specialized LLM
- Constructing data processing pipeline

NLP for Ancient Korean Common Literati Document **2022.06 – 2024.07**
Supported by **National Research Foundation** - *Project Manager at Korea University*
- Named entity recognition and document analysis for ancient Korean documents
- Engaged in data construction process and setup annotation standard
- Related Publication: `Exploiting Hanja-Based Resources in Processing Korean Historic Documents Written by Common Literati` (IEEE Access)

Domain Specialized Parallel Corpus Construction for Machine Translation **2022.06 – 2023.11**
Supported by **NIA (with Minigate Corporation)** - *Project Manager at Korea University*
- Data evaluation and supervision in curation process
- Engaged in data construction process and setup annotation standard

Automated Question-Answer pair Data Generation System **2022.03 – 2023.02**

Supported by **Hyundai Mortors** - *Head Technician at Korea University*
- Automated question-Answer pair generation framework, especially tailored to the educational purpose
- QA generation, Education domain
- Related Publication: `Towards Diverse and Effective Question-Answer Pair Generation from Children Storybooks` (ACL 2023 - findings)

User Query based Recommendation System **2022.03 – 2023.01**

Supported by **FLES corporation** - *Head Technician at Korea University*
- Commercial item recommendation systems based on the user preference
- Recommendation system, Information retrieval

Fortune Telling Generation AI Project **2022.03 – 2023.01**

Supported by **FLES corporation** - *Project Manager at Korea University*
- Fortune telling AI module. Encoder-Decoder generator along with LLM based generator system
- Language generation, Decoding strategy, Large language models
- Related Publication: `SaJuTeller: Conditional Generation Deep-Learning based Fortune Telling Model` (HCLT 2022)

Parallel Corpus Filtering and Mining Research Project **2021.12 – 2022.07**

Supported by **Naver Papago** - *Head Technician at Korea University*
- Analysis on parallel corpus filtering methods targeting Korean-English machine translation
- Parallel corpus filtering, Machine translation
- Related Publication: `Doubts on the reliability of parallel corpus filtering` (Expert Systems with Applications)

Persona-based Dialogue with k-Nearest-Neighbor Approach **2023.05 – 2023.12**

Supported by **NC Soft** - *Head Technician at Korea University*
- Research on the applicability of k-nearest neighbor approach in persona dialogue
- k-nearest neighbor, persona dialogue, language generation

Korean-Prompt-based Engineering for Few-shot Research Project **2022.05 – 2022.07**

Supported by **Hyundai Motors** - *Researcher at Korea University*
- Few-shot prompting strategy for enhancing Korean understanding task performance
- Prompt engineering, Few shot, Language understanding
- Related Publication: `https://ieeexplore.ieee.org/abstract/document/9913979` `Plain Template Insertion: Korean-Prompt-Based Engineering for Few-Shot Learners` (IEEE Access)

Information Retrieval system for Industrial Frequently Asked Question **2021.07 – 2022.03**

Supported by **Data Voucher (O2O corporation)** - *Researcher at Korea University*
- Information retrieval system for frequently-asked QA systems
- Keyword Extraction, Information Extraction, Question Answering module

Patent document processing Research Project **2021.06 – 2022.10**

Supported by **LG Innotek** - *Head Technician at Korea University*
- Sentence extraction and key phrase extraction module for patent documents
- Automatic Summarization, Sentence classification, Information Extraction
- Related Publication: `https://ieeexplore.ieee.org/abstract/document/9779775` `AI for Patents: A Novel Yet Effective and Efficient Framework for Patent Analysis` (IEEE Access)

Return on Advertising Spend (ROAS) Prediction Project **2021.07 – 2022.03**

Supported by **BizSpring corporation** - *Head Technician at Korea University*
- Regression module for return-on-advertising-spend prediction
- Keyword Extraction, Return on Advertising Spend, Regression Model
- Related Publication: `https://www.mdpi.com/2227-7390/10/10/1637` `Return on Advertising Spend Prediction with Task Decomposition-Based LSTM Model` (Mathematics)

Teaching

Teaching Assistant at Korea University **2023.09 – 2024.06**
- (DFE610-00) NLP for digital finance engineering
- (BDC101-00) Introduction to Natural Language Processing In Big Data
- (COSE461-02) Natural Language Processing

Honors & Awards

Best Paper Award **2024**
- The 36th Annual Conference on Human & Cognitive Language Technology (HCLT2024)

Best Paper Award **2023**
- The 35th Annual Conference on Human & Cognitive Language Technology (HCLT2023)

1st place in WMT 2022 QE Task 3, 2022 **2022**

- Seventh Conference on Machine Translation (WMT22) Quality Estimation Shared Task

Best Paper Award **2022**

- The 34th Annual Conference on Human & Cognitive Language Technology (HCLT2022)

Best Paper Award **2021**

- The 33rd Annual Conference on Human & Cognitive Language Technology (HCLT2021)

Patent

Device and Method For Generation of Diverse Question-Answer Pair

- U.S. Patent Application No. 18/585,166

Device and Method for Generating Fortune Telling Model Based n Conditional Generation Deep-Learning

- South Korea Patent Granted No. 10-2790031
- South Korea Patent Application No. 10-2022-0158977

Task Decomposition Method based Prediction of Return on Advertising Spend and Device Performing the same

- South Korea Patent Granted No. 10-2593447
- South Korea Patent Application No. 10-2021-0156657

Device and Method for Parallel Corpus Filtering Based On Semantic Similarity

- South Korea Patent Granted No. 10-2593448
- South Korea Patent Application No. 10-2022-0151593

Device and Method for Generating of Training Data for Quality Estimation In Machine Translation

- South Korea Patent Granted No. 10-2593447
- South Korea Patent Application No. 10-2021-0156657

Diverse and Effective Question-Answer Pair Generation System for Education

- South Korea Patent Application No. 10-2023-0024355

Device And Method For Assessment Of Educational Question-Answering

- South Korea Patent Application No. 10-2023-0162875

Performance Evaluation Method For Large Language Models Based On Intention Catching Capability

- South Korea Patent Application No. 10-2024-0169352

Device and Method for Generating Training Data For Post Editing

- South Korea Patent Application No. 10-2021-0118924