

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. Heuseok 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: Code-Verifiable Complicate Instruction Following Benchmark for Large Language Models 2025

Hyeonseok Moon, Seongtae Hong, Jaehyung Seo, Heuseok 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, Heuseok Lim
EMNLP 2025 Findings

The Impact of Negated Text on Hallucination with Large Language Models 2025

Jaehyung Seo, Hyeonseok Moon, Heuseok Lim
EMNLP 2025

Call for Rigor in Reporting Quality of Instruction Tuning Data 2025

Hyeonseok Moon, Jaehyung Seo, Heuseok Lim
ACL 2025

Cross-Lingual Optimization for Language Transfer in Large Language Models 2025

Jungseob Lee, Seongtae Hong, Hyeonseok Moon, Heuseok Lim
ACL 2025

Semantic Aware Linear Transfer by Recycling Pre-trained Language Models for Cross-lingual Transfer 2025

Seungyoon Lee, Seongtae Hong, Hyeonseok Moon, Heuseok Lim
ACL 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, Heuseok Lim
NAACL 2025 Findings

FLEX: A Benchmark for Evaluating Robustness of Fairness in Large Language Models 2025

Dahyun Jung, Seungyoon Lee, Hyeonseok Moon, Chanjun Park, Heuseok Lim
NAACL 2025 Findings

MIRAGE: A Metric-Intensive Benchmark for Retrieval-Augmented Generation Evaluation 2025

Chanhee Park, Hyeonseok Moon, Chanjun Park, Heuseok Lim
NAACL 2025 Findings

MIGRATE: Cross-Lingual Adaptation of Domain-Specific LLMs through Code-Switching and Embedding Transfer	2025
Seongtae Hong, Seungyoon Lee, <u>Hyeonseok Moon</u> , Heuiseok Lim <i>COLING 2025</i>	
Leveraging Pre-existing Resources for Data-Efficient Counter-Narrative Generation in Korean	2024
Seungyoon Lee, Chanjun Park, DaHyun Jung, <u>Hyeonseok Moon</u> , Jaehyung Seo, Sugyeong Eo, Heuiseok Lim <i>LREC-COLING 2024</i>	
Detecting Critical Errors Considering Cross-Cultural Factors in English-Korean Translation	2024
Sugyeong Eo, Jungwoo Lim, Chanjun Park, DaHyun Jung, Seonmin Koo, <u>Hyeonseok Moon</u> , Jaehyung Seo, Heuiseok Lim <i>LREC-COLING 2024</i>	
Translation of Multifaceted Data without Re-Training of Machine Translation Systems	2024
Hyeonseok Moon, Seungjun Lee, Seongtae Hong, Seungjum Lee, Chanjun Park, Heuiseok Lim <i>EMNLP 2024 Findings</i>	
Length-aware Byte Pair Encoding for Mitigating Over-segmentation in Korean Machine Translation	2024
Jungseob Lee, <u>Hyeonseok Moon</u> (<i>equal contribution</i>), Seungjun Lee, Chanjun Park, Sugyeong Eo, Hyunwoong Ko, Jaehyung Seo, Seungyoon Lee, Heuiseok Lim <i>ACL 2024 Findings</i>	
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 <i>EACL 2024 Findings</i>	
Hyper-BTS Dataset: Scalability and Enhanced Analysis of Back Transcription (BTS) for ASR Post-Processing	2024
Chanjun Park, Jaehyung Seo, Seolhwa Lee, Junyoung Son, <u>Hyeonseok Moon</u> , Sugyeong Eo, Chanhee Lee, Heui-Seok Lim <i>EACL 2024 Findings</i>	
Leveraging Pre-existing Resources for Data-Efficient Counter-Narrative Generation in Korean	2024
Seungyoon Lee, Chanjun Park, DaHyun Jung, <u>Hyeonseok Moon</u> , Jaehyung Seo, Sugyeong Eo, Heui-Seok Lim <i>LREC-COLING 2024</i>	
Detecting Critical Errors Considering Cross-Cultural Factors in English-Korean Translation	2024
Sugyeong Eo, Jungwoo Lim, Chanjun Park, DaHyun Jung, Seonmin Koo, <u>Hyeonseok Moon</u> , Jaehyung Seo, Heui-Seok Lim <i>LREC-COLING 2024</i>	
CHEF in the Language Kitchen: A Generative Data Augmentation Leveraging Korean Morpheme Ingredients	2023
Jaehyung Seo, <u>Hyeonseok Moon</u> , Jaewook Lee, Sugyeong Eo, Chanjun Park, Heui-Seok Lim <i>EMNLP 2023</i>	
KEBAP: Korean Error Explainable Benchmark Dataset for ASR and Post-processing	2023
Seonmin Koo, Chanjun Park, Jinsung Kim, Jaehyung Seo, Sugyeong Eo, <u>Hyeonseok Moon</u> , Heui-Seok Lim <i>EMNLP 2023</i>	
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, <u>Hyeonseok Moon</u> , Kisu Yang, Heuiseok Lim <i>EMNLP 2023</i>	
PEEP-talk: A situational dialogue-based chatbot for English education	2023
Seungjun Lee, Yoonna Jang, Chanjun Park, Jungseob Lee, Jaehyung Seo, <u>Hyeonseok Moon</u> , Sugyeong Eo, Seounghoon Lee, Bernardo Yahya, Heui-Seok Lim <i>ACL 2023 - Demo</i>	

Towards diverse and effective question-answer pair generation from children storybooks Sugyeong Eo, Hyeonseok Moon(<i>equal contribution</i>), Jinsung Kim, Yuna Hur, Jeongwook Kim, Songeun Lee, Changwoo Chun, Sungsoo Park, Heuiseok Lim <i>ACL 2023 Findings</i>	2023
Improving Formality-Sensitive Machine Translation Using Data-Centric Approaches and Prompt Engineering Seungjun Lee, <u>Hyeonseok Moon</u> , Chanjun Park, Heuiseok Lim <i>IWSLT 2023</i>	2023
QUAK: A synthetic quality estimation dataset for korean-english neural machine translation Sugyeong Eo, Chanjun Park, <u>Hyeonseok Moon</u> , Jaehyung Seo, Gyeongmin Kim, Jungseob Lee, Heuiseok Lim <i>COILING 2022</i>	2022
A dog is passing over the jet? a text-generation dataset for korean commonsense reasoning and evaluation Jaehyung Seo, Seounghoon Lee, Chanjun Park, Yoonna Jang, <u>Hyeonseok Moon</u> , Sugyeong Eo, Seonmin Koo, Heuiseok Lim <i>NAACL 2022 Findings</i>	2022
KU X upstage's submission for the WMT22 quality estimation: Critical error detection shared task Sugyeong Eo, Chanjun Park, <u>Hyeonseok Moon</u> , Jaehyung Seo, HeuiSeok Lim <i>WMT 2022</i>	2022
Priming ancient Korean neural machine translation Chanjun Park, Seolhwa Lee, Jaehyung Seo, <u>Hyeonseok Moon</u> , Sugyeong Eo, Heui-Seok Lim <i>LREC 2022</i>	2022
Empirical Analysis of Noising Scheme based Synthetic Data Generation for Automatic Post-editing <u>Hyeonseok Moon</u> , Chanjun Park, Seolhwa Lee, Jaehyung Seo, Jungseob Lee, Sugyeong Eo, HeuiSeok Lim <i>LREC 2022</i>	2022
A Self-Supervised Automatic Post-Editing Data Generation Tool <u>Hyeonseok Moon</u> , Chanjun Park, Sugyeong Eo, Jaehyung Seo, SeungJun Lee, Heuiseok Lim <i>ICML 2022 - DataPerf Workshop</i>	2022
BTS: Back TranScription for Speech-to-Text Post-Processor using Text-to-Speech-to-Text Chanjun Park, Jaehyung Seo, Seolhwa Lee, Chanhee Lee, <u>Hyeonseok Moon</u> , Sugyeong Eo, Heuiseok Lim <i>WAT2021 - ACL Workshop</i>	2021
Should we find another model?: Improving neural machine translation performance with one-piece tokenization method without model modification Chanjun Park, Sugyeong Eo, <u>Hyeonseok Moon</u> , HeuiSeok Lim <i>NAACL 2021 - industry track</i>	2021
International Journal	
Doubts on the reliability of parallel corpus filtering <u>Hyeonseok Moon</u> , Chanjun Park, Seonmin Koo, Jungseob Lee, Seungjun Lee, Jaehyung Seo, Sugyeong Eo, Yoonna Jang, Hyunjoong Kim, Hyoung-gyu Lee, Heuiseok Lim <i>Expert Systems with Applications</i>	2023
PU-GEN: Enhancing generative commonsense reasoning for language models with human-centered knowledge Jaehyung Seo, Dongsuk Oh, Sugyeong Eo, Chanjun Park, Kisu Yang, <u>Hyeonseok Moon</u> , Kinam Park, Heuiseok Lim <i>Knowledge-Based Systems</i>	2022
An empirical study on automatic post editing for neural machine translation <u>Hyeonseok Moon</u> , Chanjun Park, Sugyeong Eo, Jaehyung Seo, Heuiseok Lim <i>IEEE Access</i>	2021
An automatic post editing with efficient and simple data generation method <u>Hyeonseok Moon</u> , Chanjun Park, Jaehyung Seo, Sugyeong Eo, Heuiseok Lim <i>IEEE Access</i>	2022

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 <i>IEEE Access</i>	
AI for patents: A novel yet effective and efficient framework for patent analysis	2022
Junyoung Son, <u>Hyeonseok Moon</u> , Jeongwoo Lee, Seolhwa Lee, Chanjun Park, Wonkyung Jung, Heuiseok Lim <i>IEEE Access</i>	
Plain template insertion: korean-prompt-based engineering for few-shot learners	2022
Jaehyung Seo, <u>Hyeonseok Moon</u> , Chanhee Lee, Sugyeong Eo, Chanjun Park, Jihoon Kim, Changwoo Chun, Heuiseok Lim <i>IEEE Access</i>	
Mimicking infants' bilingual language acquisition for domain specialized neural machine translation	2022
Chanjun Park, Woo-Young Go, Sugyeong Eo, <u>Hyeonseok Moon</u> , Seolhwa Lee, Heuiseok Lim <i>IEEE Access</i>	
A survey on evaluation metrics for machine translation	2023
Seungjun Lee, Jungseob Lee, <u>Hyeonseok Moon</u> , Chanjun Park, Jaehyung Seo, Sugyeong Eo, Seonmin Koo, Heuiseok Lim <i>Mathematics</i>	
Comparative analysis of current approaches to quality estimation for neural machine translation	2021
Sugyeong Eo, Chanjun Park, <u>Hyeonseok Moon</u> , Jaehyung Seo, Heuiseok Lim <i>Applied Sciences</i>	
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 <i>Mathematics</i>	
Word-level quality estimation for Korean-English neural machine translation	2022
Sugyeong Eo, Chanjun Park, <u>Hyeonseok Moon</u> , Jaehyung Seo, Heuiseok Lim <i>IEEE Access</i>	

Collaborative Project

World Best LLM - with NC AI	2025.07 – now
<i>Supported by National Research Foundation - Team Leader at Korea University</i>	
<ul style="list-style-type: none"> ○ Supervise LLM training process and Evaluating trained LLMs ○ Evaluation data curation. Evaluation dashboard management ○ Training data curation and management 	
LLM Assistant for Teaching Human Consultant	2024.07 – 2025.08
<i>Supported by Creative Digital Lab - Project Manager at Korea University</i>	
<ul style="list-style-type: none"> ○ Training Large Language Models with Data Curation ○ Data augmentation with a few human-annotated labels 	
Legal Domain Vertical LLM	2024.07 – 2025.07
<i>Supported by KT - Project Manager at Korea University</i>	
<ul style="list-style-type: none"> ○ 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
<i>Supported by National Research Foundation - Project Manager at Korea University</i>	
<ul style="list-style-type: none"> ○ 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 (<i>IEEE Access</i>) 	
Domain Specialized Parallel Corpus Construction for Machine Translation	2022.06 – 2023.11
<i>Supported by NIA (with Minigate Corporation) - Project Manager at Korea University</i>	
<ul style="list-style-type: none"> ○ 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

Device and Method for Automatic Evaluation of Call Center Agent Conversation

- South Korea Patent Application No. 10-2025-0100212

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