

Shinhyeok Oh

NLP RESEARCH SCIENTIST - ALTERNATIVE MILITARY SERVICE (JUL 2021 - JUL 2024)

Seoul, Republic of Korea

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Work Experience

Riiid

Seoul, Republic of Korea

NLP RESEARCH SCIENTIST

Dec 2022 - Present

- Large Language Model
 - research on cross-lingual LLM (English, Korean)
 - single-node & multi-node training using DeepSpeed and FSDP (- 70b)
- Automated Essay Assessment
 - research on alleviating performance degradation in scoring long-text
 - designing self-consistency methods (e.g. prompt decomposition) for in-context learning pipeline
 - successful execution of PoC related to AP World History and Bar Exam
- Question Generation & Evaluation
 - research on robust QG evaluation approaches for Riiid's AI product (Quizium)
 - published in ACL 2023 (1st author; findings)
- Japanese Question Auto-tagging
- TOEIC Writing Scoring

Netmarble

Seoul, Republic of Korea

NLP RESEARCHER & ENGINEER

Apr 2021 - Dec 2022

- Game NMT Service
 - providing machine translation service for the global release of new games
 - maintenance on Magellan Machine Translation (MaMT) system (springboot + docker + jenkins)
 - research on glossary modeling
- Automatic Post-editing
 - research on automatic post-editing task (en-de)
 - 1st place, automatic post-editing task @WMT, EMNLP 2021
- Text-to-Speech Synthesis
 - research on multi-modal modeling using dependency parsing feature
 - published in AAAI 2023 (1st author; oral)
- Chatbot
 - research on persona chatbot, generative chatbot w/ passage retrieval

Kakao Enterprise

Seongnam, Republic of Korea

NLP RESEARCHER (RESEARCH INTERNSHIP)

Sep 2020 - Feb 2021

- Aspect-based Sentiment Analysis
 - research on aspect-based sentiment analysis using self-supervised and multi-task learning
 - published in ACL 2021 (1st author; oral)

Selected Publications from Industry

Evaluation of Question Generation Needs More References

Shinhyeok Oh*, Hyeonjun Go*, Hyeongdon Moon, Yunsung Lee, Myeongho Jeong, Hyun Seung Lee and Seungtaek Choi

(*equal contribution)

ACL 2023 (Findings, short) - @Riiid

RWEN-TTS: Relation-aware Word Encoding Network for Natural Text-to-Speech Synthesis

Shinhyeok Oh*, HyeonRae Noh*, Yoonseok Hong, Insoo Oh

AAAI 2023 (Oral Presentation) - @Netmarble

Netmarble AI Center' s WMT21 Automatic Post-Editing Shared Task Submission

Shinhyeok Oh*, Sion Jang*, Hu Xu*, Shounan An, Insoo Oh

WMT @EMNLP 2021 (1st place) - @Netmarble

Deep Context- and Relation-Aware Learning for Aspect-based Sentiment Analysis

Shinhyeok Oh*, Dongyub Lee*, Taesun Whang, IlNam Park, Gaeun Seo, EungGyun Kim, Harksoo Kim

ACL 2021 (Oral Presentation, short) - @Kakao Enterprise

Honors & Awards

OCT 2023 **1st Place**, Open LLM Leaderboard (as of Oct 4, 2023) @Huggingface
Nov 2021 **1st Place**, Automatic Post-Editing shared task @WMT, EMNLP 2021
Oct 2020 **Special Prize**, Korean Language Information Processing Competition - Chatbot @HCLT 2020
Oct 2020 **Special Prize**, Korean Language Information Processing Competition - Sentiment Analysis @HCLT 2020
Oct 2019 **Bronze Prize**, Korean Language Information Processing Competition - Dependency Parsing @HCLT 2019
Sep 2019 **Gold Prize**, Kangwon SW Festival - @National Program of Excellence in Software
Oct 2018 **Grand Prize**, Korean Language Information Processing Competition - Dependency Parsing @HCLT 2019
Jul 2016 **1st Place**, Department of Computer and Communications Engineering (Rank: 1/97), Spring Semester 2016

Teaching Experience

2023	Instructor , Special Lecture for Junior (Guidance on career path) @Kangwon National University	Republic of Korea
2023	Instructor , Special Lecture for Freshman (AI Foundation Models) @Kangwon National University	Republic of Korea
2022	Instructor , Special Lecture for Junior (Career in Artificial Intelligence) @Kangwon National University	Republic of Korea
2020	Teaching Assistant , Natural Language Processing @LG Uplus	Republic of Korea
2018-2019	Teaching Assistant , Java Programming, C Programming, App Programing @Kangwon National University	Republic of Korea
2017	Instructor , Java Programming (Supplementary classes supported by Kangwon National University)	Republic of Korea

Academic Activities

- Reviewer of ACL, NAACL, EACL, and ARR
- Reviewer of IEEE Transactions on Audio, Speech and Language Processing

Education

Kangwon National University

M.S. IN DEPARTMENT OF COMPUTER AND COMMUNICATIONS ENGINEERING, GPA 4.31 / 4.5

Chuncheon, Republic of Korea

Sep 2019 - Feb 2021

Kangwon National University

B.S. IN DEPARTMENT OF COMPUTER AND COMMUNICATIONS ENGINEERING, GPA 3.86 / 4.5

Chuncheon, Republic of Korea

Mar 2016 - Feb 2021

Experience as a Student

NLP Lab (Konkuk University)

STUDENT (ADVISOR: PROF. HARKSOO KIM)

- research on persona-based chatbot
- development of Korean language model

Seoul, Republic of Korea

Mar 2020 - Sep 2020

NLP Lab (Kangwon National University)

STUDENT (ADVISOR: PROF. HARKSOO KIM)

- research on persona-based chatbot
- development of web, demo, annotation tool, gpubot, etc...

Chuncheon, Republic of Korea

Aug 2018 - Mar 2020

Self-employed (using freelancer platform)

DEVELOPER

- development of Web, Android, Application Software
 - C# Form-based GUI Softwares
 - single-page websites
 - Android applications
 - crawling softwares
- 30+ Projects (revenue exceeding 20 million won)

Republic of Korea

2018-2019

Skills

- Languages: Python, Java, C, C#, HTML/CSS/JS, Android
- Deep Learning Libs: PyTorch, Tensorflow
- Etc.: Springboot, Gnuboard, Google Cloud Platform, Deepspeed, ...

Certificate

Certificate of Engineer Information Processing

HUMAN RESOURCES DEVELOPMENT SERVICE OF KOREA

Republic of Korea

2019

Other Publications

INTERNATIONAL PUBLICATIONS

Multi-Architecture Multi-Expert Diffusion Models

Yunsung Lee*, Jin-Young Kim*, Hyojun Go*, Myeongho Jeong, Shinhyeok Oh, Seungtaek Choi

(*equal contribution)

AAAI 2024 (accepted)

Addressing Negative Transfer in Diffusion Models

Hyojun Go*, JinYoung Kim*, Yunsung Lee*, Seunghyun Lee, Shinhyeok Oh, Hyeongdon Moon, Seungtaek Choi

NeurIPS 2023

Cross Encoding As Augmentation: Towards Effective Educational Text Classification

Hyun Seung Lee*, Seungtaek Choi*, Yunsung Lee, Hyeongdon Moon, Shinhyeok Oh, Myeongho Jeong, Hyojun Go, Christian Wallraven

ACL 2023 (Findings, short)

Improving Document-Level Sentiment Classification Using Importance of Sentences

Gihyeon Choi, Shinhyeok Oh, Harksoo Kim

Entropy, 2020 (SCIE)

Multi-Turn Chatbot Based on Query-Context Attentions and Dual Wasserstein Generative Adversarial Networks

Jintae Kim, Shinhyeok Oh, Oh-Woog Kwon, Harksoo Kim

Appl. Sci., 2019 (SCIE)

DOMESTIC PUBLICATIONS

Method of Reflecting Various Personas in a Chatbot

Shinhyeok Oh, Seokwon Jung, Harksoo Kim

Journal of KIISE, 2021 (KCI)

Movie Reviews Sentiment Analysis Considering the Order in which Sentiment Words Appear

HongJin Kim, Damrin Kim, Boeun Kim, Shinhyeok Oh, Harksoo Kim

HCLT 2020

Korean Named Entity Recognition Using ELECTRA and Label Attention Network

HongJin Kim, Shinhyeok Oh, Harksoo Kim

HCLT 2020

Korean Generative Chatbot using Topic Embedding

Shinhyeok Oh, Harksoo Kim

HCLT 2020

Personal Characteristics Classifier for Persona Chatbot Research

Shinhyeok Oh, Harksoo Kim, Jeong-Eom Lee, Seona Kim, Youngmin Park, Myungho Noh

KSC 2019

Personalized Multi-Turn Chatbot Based on Dual WGAN

Shinhyeok Oh, Jintae Kim, Harksoo Kim, Jeong-Eom Lee, Seona Kim, Youngmin Park, Myungho Noh

HCLT 2019

Multi-head Attention and Pointer Network Based Syllables Dependency Parser

HongJin Kim, Shinhyeok Oh, Damrin Kim, Boeun Kim, Harksoo Kim

HCLT 2019

Persona Reflection Method for Generative Chatbot System

Shinhyeok Oh, Jintae Kim, Youngmin Park, Seona Kim, Jeong-Eom Lee, Harksoo Kim

KCC 2019

Korean Dependency Parsing Using ELMo and Multi-head Attention

Seongsik Park, Shinhyeok Oh, Hongjin Kim, Sihyung Kim, Harksoo Kim

HCLT 2018

Korean Dependency Parsing using Multi-head Attention and Pointer Network

Seongsik Park, Shinhyeok Oh, Hongjin Kim, Harksoo Kim

HCLT 2018