Shinhyeok **Oh**

NLP Research Scientist - Alternative military service (Jul 2021 - Jul 2024)

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Summary

I obtained a master's degree in computer and communications engineering from the Kangwon National University, under the guidance of Prof. Harksoo Kim. I am currently working at Riiid as Research Scientist (NLP). I enjoy discussing topics related to transfer learning. I find pleasure in exploring ways, such as self-supervised learning, domain adaptation, and multimodality, to extract value from previously unutilized something.

Education

Kangwon National University   *Chuncheon, Republic of Korea*

M.S. in Department of Computer and Communications Engineering, GPA 4.31 / 4.5   *Sep 2019 - Feb 2021*

Kangwon National University   *Chuncheon, Republic of Korea*

B.S. in Department of Computer and Communications Engineering, GPA 3.86 / 4.5   *Mar 2016 - Feb 2021*

Experience

Riiid   *Seoul, Republic of Korea*

NLP Research Scientist   *Dec 2022 - Present*

- Research on Large Language Model
- Research on Automatic Essay Assessment
- Research on Question Generation & Evaluation
- Data Analysis and Qualification for Procured Data

Netmarble   *Seoul, Republic of Korea*

NLP Researcher & Engineer   *Apr 2021 - Dec 2022*

- Maintenance on Game NMT Service
- Research on Automatic Post-editing
- Research on Text-to-Speech Synthesis
- Development of Persona Chatbot
- Development of Chatbot with Passage Retrieval

Kakao Enterprise   *Seongnam, Republic of Korea*

NLP Researcher (Research Internship)   *Sep 2020 - Feb 2021*

- Research on Aspect-based Sentiment Analysis using Self-supervised and Multi-task Learning

NLP Lab (Konkuk University)   *Seoul, Republic of Korea*

Student (Advisor: Prof. Harksoo Kim)   *Mar 2020 - Sep 2020*

- Research on Persona-based Chatbot
- Development of Korean Language Model

NLP Lab (Kangwon National University)   *Chuncheon, Republic of Korea*

Student (Advisor: Prof. Harksoo Kim)   *Aug 2018 - Mar 2020*

- Research on Persona-based Chatbot

Self-employed (Kmong)   *Republic of Korea*

Developer   *2018*

- Development of Web, Android, Application Software
- 30+ Projects

Publications

International Publications

Multi-Architecture Multi-Expert Diffusion Models

Yunsung Lee, Jin-Young Kim*, Hyojun Go*, Myeongho Jeong, **Shinhyeok Oh**, Seungtaek Choi*   (*co-first author*)

Arxiv Preprint (Under review)

Addressing Negative Transfer in Diffusion Models

Hyojun Go*, JinYoung Kim*, Yunsung Lee*, Seunghyun Lee, <u>Shinhyeok Oh</u>, Hyeongdon Moon, Seungtaek Choi (*co-first author)

NeurIPS 2023 (*Accepted*)

Evaluation of Question Generation Needs More References

<u>Shinhyeok Oh</u>*, Hyojun Go*, Hyeongdon Moon, Yunsung Lee, Myeongho Jeong, Hyun Seung Lee and Seungtaek Choi (*equal contribution*)

ACL 2023 (*Findings, short*)

Cross Encoding As Augmentation: Towards Effective Educational Text Classification

Hyun Seung Lee*, Seungtaek Choi*, Yunsung Lee, Hyeongdon Moon, <u>Shinhyeok Oh</u>, Myeongho Jeong, Hyojun Go, Christian Wallraven (*equal contribution*)

ACL 2023 (*Findings, short*)

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

<u>Shinhyeok Oh</u>*, HyeongRae Noh*, Yoonseok Hong, Insoo Oh (*equal contribution*)

AAAI 2023 (*Oral Presentation*)

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

<u>Shinhyeok Oh</u>*, Sion Jang*, Hu Xu*, Shounan An, Insoo Oh (*equal contribution*)

WMT @EMNLP 2021 (*1st place*)

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

<u>Shinhyeok Oh</u>*, Dongyub Lee*, Taesun Whang, IlNam Park, Gaeun Seo, EungGyun Kim, Harksoo Kim (*equal contribution*)

ACL 2021 (*Oral Presentation, short*)

Improving Document-Level Sentiment Classification Using Importance of Sentences

Gihyeon Choi, <u>Shinhyeok Oh</u>, Harksoo Kim

Entropy, 2020 (*SCIE*)

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

Jintae Kim, <u>Shinhyeok Oh</u>, Oh-Woog Kwon, Harksoo Kim

Appl. Sci., 2019 (*SCIE*)

DOMESTIC PUBLICATIONS

Method of Reflecting Various Personas in a Chatbot

<u>Shinhyeok Oh</u>, Seokwon Jung, Harksoo Kim

Journal of KIISE, 2021 (*KCI*)

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

HongJin Kim, Damrin Kim, Boeun Kim, <u>Shinhyeok Oh</u>, Harksoo Kim

HCLT 2020

Korean Named Entity Recognition Using ELECTRA and Label Attention Network

HongJin Kim, <u>Shinhyeok Oh</u>, Harksoo Kim

HCLT 2020

Korean Generative Chatbot using Topic Embedding

<u>Shinhyeok Oh</u>, Harksoo Kim

HCLT 2020

Personal Characteristics Classifier for Persona Chatbot Research

<u>Shinhyeok Oh</u>, Harksoo Kim, Jeong-Eom Lee, Seona Kim, Youngmin Park, Myungho Noh

KSC 2019

Personalized Multi-Turn Chatbot Based on Dual WGAN

<u>Shinhyeok Oh</u>, 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, <u>Shinhyeok Oh</u>, Damrin Kim, Boeun Kim, Harksoo Kim

HCLT 2019

Persona Reflection Method for Generative Chatbot System

<u>Shinhyeok Oh</u>, 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

Honors & Awards

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

Certificate

Certificate of Engineer Information Processing *Republic of Korea*

Human Resources Development Service of Korea *2019*

Skills

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

Teaching Experience

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