# Shinhyeok **Oh**

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

*Seoul, Republic of Korea*

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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), and enjoy discussing topics related to transfer learning and knowledge distillation. Specifically, I find pleasure in exploring ways, such as self-supervised learning, domain adaptation, and multi-modality, to extract value from other tasks, domains, or previously overlooked resources for the intended objective.

## 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 Cross-lingual Large Language Model (7b - 70b)
- Research on Automatic Essay Assessment
- Research on Question Generation & Evaluation
- Development of Japanese Question Auto-tagging Model
- 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
- Development of Web, Demo, Annotation tool, GPUbot, etc...

**Self-employed (using freelancer platform)**                     *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, **Shinhyeok Oh**, Hyeongdon Moon, Seungtaek Choi*     (*co-first author)

*NeurIPS 2023 (Accepted)*

### Evaluation of Question Generation Needs More References

***Shinhyeok Oh**\*, 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, **Shinhyeok Oh**, 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

***Shinhyeok Oh**\*, HyeongRae Noh\*, Yoonseok Hong, Insoo Oh*     (*equal contribution)

*AAAI 2023 (Oral Presentation)*

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

***Shinhyeok Oh**\*, 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

***Shinhyeok Oh**\*, 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, **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 Revies 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*

## 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, Deepspeed, ...

## Teaching Experience

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|---|---|---|
| 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