

Yekyung Kim
sigma89kim@gmail.com
+82 10-3128-7393

**RESEARCH
INTERESTS**

Natural Language Processing and Machine Learning

My research goal is to build an **efficient** and **trustworthy** system that connects humans and machines leveraging language as a bridge. From learning machine knowledge with limited resources to expanding machine knowledge to have human-like abilities, I am interested in the reliable communication between humans and machines and how they can learn and teach knowledge efficiently.

EXPERIENCE

Hyundai Motors Group

Senior Research Engineer

Feb 2021 - Present

Seoul, Korea

- Developed natural language understanding (NLU) and out-of-distribution (OOD) detection systems for in-car voice assistants and customer service chatbot.
- Applied data-centric approaches such as text generation and data re-weighting for improving robustness of systems
- Collaborated in research projects to tackle various real-world problems, e.g., low-resource, robustness, using data augmentation [1], active learning [2], and OOD detection based on data informativeness [3]

LG Electronics

Research Engineer

Dec 2014 - Feb 2021

Seoul, Korea

- Developed multi-action intent classifier and named entity recognition (NER) [5] in Korean, English based on deep learning for Incheon Airport Robot, customer service and home appliances control chatbot.
- Designed and developed algorithm to measure uncertainty for active learning to minimize the labeling cost in classification and sequence tagging tasks [4]
- Developed algorithm for detecting anomaly battery draining on devices and recommendation system for tip contents based on user segmentation using machine learning approach (equipped on LG Mobile)

Carnegie Mellon University

Visiting Scientist

Apr 2019 - Aug 2019

Pittsburgh, United States

- Advisor: Prof. Jaime Carbonell (Language Technology Institute)
- Researched hybrid method combining active learning and self-training to efficiently exploit information from unlabeled data to minimize the labeling cost

EDUCATION

Seoul National University

M.S. in Convergence Science and Technology

Mar 2013 - Feb 2015

- Advisor: Prof. Kyogu Lee (Music and Audio Research Group)
- Thesis: "Crowds vs. Broadcasters: Predicting Billboard Rank Using Characteristic of Music Listening Behavior in Twitter" (**Outstanding Paper Award**)

Chung-Ang University

B.S. in Computer Science and Engineering

Mar 2008 - Feb 2013

University of California, Berkeley

Visiting Student, Summer Session

May 2011 - Aug 2011

PUBLICATIONS

- [1] **Yekyung Kim**, Seohyeong Jeong, Kyunghyun Cho. "LINDA: Learning to Interpolate in Natural Language Processing" *Under Review at Journal of Transactions on Machine Learning Research (TMLR)*, 2022

- [2] Jaehyung Kim, **Yekyung Kim**, Dongyeop Kang. "infoVerse: Dataset Characterization with Multi-dimensional Meta-information" *arXiv*, 2022
- [3] Ryan Koo, **Yekyung Kim**, Dongyeop Kang, Jaehyung Kim. "Meta-Crafting: Combining Different Meta-informations for Detecting Out-of-distribution" *Under Review at European Chapter of the Association for Computational Linguistics (EACL)*, 2022
- [4] **Yekyung Kim**. "Deep Active Learning for Sequence Labeling based on Diversity and Uncertainty in Gradient" *Workshop on Life-long Learning for Spoken Language Systems at ACL*, 2021
- [5] Yejin Kim, **Yekyung Kim***. "Learning Sub-Character level representation for Korean Named Entity Recognition" *FLAIR*, 2021 (*equal contributions)
- [6] **Yekyung Kim**, Bongwon Suh, and Kyogu Lee. "#Nowplaying the Future Billboard: Mining Music Listening Behaviors of Twitter Users for Hit Song Prediction" *Workshop on Social Media Retrieval and Analysis, SoMeRA at SIGIR*, 2014
- [7] Ramik Sadana, **Yekyung Kim**, Bongwon Suh, Eunye Koh. "A Visual Analytics Approach to Summarizing Tweets" *Industrial Session at SIGIR*, 2014

IN PREPARATION **Yekyung Kim**, Seohyeong Jeong, Kyunghyun Cho. "Conformal Prediction for Autoregressive Sequence Generation"

Yekyung Kim. "Few-shot Fine-tuning with chain-of-thought"

Yekyung Kim, Juae Kim, Dongyeop Kang. "Saliency based Text Augmentation"

HONORS AND AWARDS	AI Specialist (Selected one of the top 12 researchers), <i>LG Electronics</i>	2019
	Outstanding Paper Award , <i>Seoul National University</i>	2015
	The Grand Prize in Datathon, <i>Ministry of Science and ICT</i>	2014
	Merit-based scholarship , <i>Seoul National University</i>	2014
	BK21 Research Fellowship , <i>Brain Korea 21</i>	2014
	The OSS Award , <i>North East Asia Open Source Software</i>	2013
	The Gold Prize in Open Source Software World Challenge, <i>NIPA</i>	2012
	Software Maestro Scholarship , <i>NIPA</i>	2012
	Engineering Scholarship , <i>Chung-Ang University</i>	2012
	Academic Excellence Scholarship , <i>Chung-Ang University</i>	2011, 2012

PATENTS **Yekyung Kim**, Gyeonghoon Kim, Yejin Kim. Voice processing device and voice processing method. KR Patent 10-2306-3930000

Heungnam Kim, Inae Ha, **Yekyung Kim**. MOBILE TERMINAL AND CONTROL METHOD FOR THE MOBILE TERMINAL. KR Patent 10-2364-0870000

INTERNSHIP	Electronics and Telecommunications Research Institute	Jan 2013 - Mar 2013
	<i>Research Intern</i>	Daejeon, Korea
	<ul style="list-style-type: none"> • Collaborator: Ph.D Jeongdan Choe • Collaborated in research projects of unmanned vehicle parking system 	
	Seoul National University	Jan 2012 - Feb 2012
	<i>Research Intern</i>	Suwon, Korea
	<ul style="list-style-type: none"> • Collaborator: Prof. Kyogu Lee • Collaborated in developing movie genre prediction model based on scenario text with topic modeling algorithm 	
	Chung-ang University	Oct 2010 - Nov 2012
	<i>Research Intern</i>	Seoul, Korea
	<ul style="list-style-type: none"> • Collaborator: Prof. Byungwoo Hong • Collaborated in research projects of computer vision and medical imaging processing system 	

EXTRA- CURRICULAR ACTIVITIES	Selected member of 10th Qualcomm IT Tour, <i>Qualcomm</i>	2012
	Selected member of 3rd Software Maestro, <i>The Ministry of Knowledge Economy</i>	2012
	Participated in mentoring system of Women in Science, Engineering and Technology	2011
	Participated in mentoring system of Joogang news	2011
ACADEMIC SERVICE	Reviewer of Empirical Methods in Natural Language Processing (EMNLP):	2022
	Reviewer of Neural Information Processing Systems (NeurIPS):	2022
INVITED TALKS	LINDA: Learning to Interpolate in Natural Language Processing	
	Cohere.ai (online), Feb 2022	
	Saliency based Text Augmentation	
	Minnesota NLP Group (online), Sep 2021	
TECHNICAL STRENGTHS	Computer Languages	python, java, C/C++
	Software Tools	PyTorch, Tensorflow, MATLAB, R