

Hwanhee Lee

POSTDOCTORAL RESEARCHER @ SEOUL NATIONAL UNIVERSITY

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Education

Seoul National University

PH.D OF ELECTRICAL AND COMPUTER ENGINEERING

- Machine Intelligence Laboratory (Advisor: Prof. Kyomin Jung)
- Thesis: Factual Consistency Evaluation for Conditional Text Generation Systems (Committee: Kyuseok Shim, Kyomin Jung, Taesup Moon, Seung-won Hwang (SNU), and JinYeong Bak (SKKU))
- Distinguished Ph.D Dissertation Award

Seoul, Korea

Aug. 2022

Seoul National University

BACHELOR OF ELECTRICAL AND COMPUTER ENGINEERING

Seoul, Korea

Feb. 2017

Research Experience

Research Interests

Natural Language Processing, Deep Learning

Current Focus

Language Generation and Evaluation, Factual Consistency Optimization, Multimodal Language Understanding

Seoul National University

POSTDOCTORAL RESEARCHER

- Senior Researcher, Automation and Systems Research Institute

Seoul, Korea

Sep. 2022 - Current

Adobe Research

COLLABORATIVE RESEARCHER

- Natural Language Processing Group
- Remote Working with Dr. Seunghyun Yoon, Dr. Franck Dernoncourt, Dr. Trung Bui, and Dr. Doo Soon Kim
- Theme: Text Evaluation Metric, Factual Error Correction, Multimodal Dialogue Generation
- Published 5+ papers (including ACL 2021, NAACL 2021, EMNLP 2021)

San Jose, CA, USA

Nov. 2019 - Current

NAVER CLOVA AI Research

RESEARCH INTERN

- NAVER AI LAB Language Research Team
- Working with Dr. Hwaran Lee, Dr. Kang Min Yoo, and Prof. Joonsuk Park
- Theme: Factual Consistency Evaluation and Optimization for Abstractive Summarization
- Published a paper at NAACL 2022

Seongnam, Korea

Aug. 2021 - Jan. 2022

Seoul National University

RESEARCH ASSISTANT

- Published 14+ papers
- Carried out 8 research projects
- Worked as a teaching assistant for 8 semesters

Seoul, Korea

Mar. 2017 - Aug. 2022

Scholarships & Awards

Distinguished Ph.D. Dissertation Award

AWARDED BY DEPT. OF ELECTRICAL AND COMPUTER ENGINEERING, SEOUL NATIONAL UNIVERSITY

Aug. 2022

AIIS Youlchon AI STAR Scholarship

GRANTED BY NONGSIM YOULCHON FOUNDATION

Sep. 2021

Scholarship of Electronics, Electrical and Computer Engineering

GRANTED BY FOUNDATION FOR ELECTRONICS, ELECTRICAL AND COMPUTER ENGINEERING AT SEOUL NATIONAL UNIVERSITY

Mar. 2018

National Science & Technology Scholarship (Full-tuition)

GRANTED BY KOREA STUDENT AID FOUNDATION

Mar. 2013 - Feb. 2017

Publications

International Conferences

Masked Summarization to Generate Factually Inconsistent Summaries for Improved Factual Consistency Checking

HWANHEE LEE, KANG MIN YOO, JOONSUK PARK, HWARAN LEE, AND KYOMIN JUNG

- Findings of the Association for Computational Linguistics: NAACL 2022 ([Findings of NAACL 2022](#))

QACE: Asking Questions to Evaluate an Image Caption

HWANHEE LEE, THOMAS SCIALOM, SEUNGHYUN YOON, FRANK DERNONCOURT, AND KYOMIN JUNG

- Findings of the Association for Computational Linguistics: EMNLP 2021 ([Findings of EMNLP 2021](#))

CrossAug: A Contrastive Data Augmentation Method for Debiasing Fact Verification Models

MINWOO LEE, SEUNGPIL WON, JUAE KIM, HWANHEE LEE, CHEONUM PARK, AND KYOMIN JUNG

- 30th ACM International Conference on Information and Knowledge Management ([CIKM 2021](#))

UMIC: An Unreferenced Metric for Image Captioning via Contrastive Learning

HWANHEE LEE, SEUNGHYUN YOON, FRANK DERNONCOURT, TRUNG BUI, AND KYOMIN JUNG

- The Joint Conference of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing ([ACL 2021](#))

Entangled Bidirectional Encoder to Autoregressive Decoder for Sequential Recommendation

TAEGWAN KANG, HWANHEE LEE, BYEONGJIN CHOE, AND KYOMIN JUNG

- International ACM SIGIR Conference on Research and Development in Information Retrieval ([SIGIR 2021](#))

KPQA: A Metric for Generative Question Answering Using Keyphrase Weights

HWANHEE LEE, SEUNGHYUN YOON, FRANK DERNONCOURT, DOO SOON KIM, TRUNG BUI, JOONGBO SHIN, AND KYOMIN JUNG

- Annual Conference of the North American Chapter of the Association for Computational Linguistics ([NAACL 2021](#))

Attentive Modality Hopping Mechanism for Speech Emotion Recognition

SEUNGHYUN YOON, SUBHADEEP DEY, HWANHEE LEE, AND KYOMIN JUNG

- IEEE International Conference on Acoustics, Speech and Signal Processing ([ICASSP 2020](#))

Improving Neural Question Generation Using Answer Separation

YANGHOON KIM, HWANHEE LEE, JOONGBO SHIN, AND KYOMIN JUNG

- Thirty-Third AAAI Conference on Artificial Intelligence ([AAAI 2019](#))

In Progress

Factual Error Correction for Abstractive Summaries Using Entity Retrieval

HWANHEE LEE, CHEONEUM PARK, SEUNGHYUN YOON, TRUNG BUI, FRANCK DERNONCOURT, JUAE KIM, AND KYOMIN JUNG

- Under Review & Pre-print on arXiv

Task-specific Knowledge Extraction for Multi-task Language Models using Attribution-based Pruning

NAKYEONG YANG, YUNAH JANG, HWANHEE LEE, SEOHYEONG JUNG, AND KYOMIN JUNG

- Under Review & Pre-print on arXiv

Learning a Reference-less Metric for Image Captioning via Contrastive Learning

HWANHEE LEE, SEUNGHYUN YOON, FRANK DERNONCOURT, TRUNG BUI, AND KYOMIN JUNG

- Under Review

Gated Relational Target-aware Encoder and Local Context-aware Decoder for Target-oriented Opinion Words Extraction

TAEGWAN KANG, SEGWANG KIM, HYEONGU YUN, HWANHEE LEE, AND KYOMIN JUNG

- Under Review

Improving Abstractive Dialogue Summarization Using Keyword Extraction

CHONGJAE YOO, [HWANHEE LEE](#), AND KYOMIN JUNG

- Under Review

Workshop Papers

Improving Multiple Documents Grounded Goal-Oriented Dialog Systems via Diverse Knowledge Enhanced Pre-trained Language Model

YUNAH JANG, DONGRYEOL LEE, HYUNG JOO PARK, TAEGWAN KANG, [HWANHEE LEE](#), HYUNKYUNG BAE, AND KYOMIN JUNG

- ACL Workshop on Document-grounded Dialogue and Conversational Question Answering (**ACL-W 2022**)

Learning to Select Question-Relevant Relations for Visual Question Answering

JAEOONG LEE*, HEEJOON LEE*, [HWANHEE LEE](#), AND KYOMIN JUNG

- NAACL Workshop on Multimodal Artificial Intelligence Workshop (**NAACL-W 2021**)

Relevance Similarity Scorer and Entity Guided Reranking for Knowledge Grounded Dialog System

HYUNKYUNG BAE, MINWOO LEE, AHHYEON KIM, AND [HWANHEE LEE](#), CHEONGJAE LEE, CHEONUM PARK, DONGHYEON KIM, AND KYOMIN JUNG

- AAAI Workshop on Dialog System Technology Challenge (**AAAI-W 2021**)

ViLBERTScore: Evaluating Image Caption Using Vision-and-Language BERT

[HWANHEE LEE](#), SEUNGHYUN YOON, FRANK DERNONCOURT, DOO SOON KIM, TRUNG BUI, AND KYOMIN JUNG

- EMNLP Workshop on Evaluation and Comparison of NLP Systems (**EMNLP-W 2020**)

Multimodal Semantic Transformer Network with Retrieval Style Word Generator

[HWANHEE LEE](#), SEUNGHYUN YOON, FRANK DERNONCOURT, DOO SOON KIM, TRUNG BUI, AND KYOMIN JUNG

- AAAI Workshop on Dialog System Technology Challenge (**AAAI-W 2020**)

Attention-based Convolutional Neural Networks for Multi-label Emotion Classification

YANGHOON KIM, [HWANHEE LEE](#), AND KYOMIN JUNG

- NAACL Workshop on Semantic Evaluation 2018 (**NAACL-W 2018**)

Research Projects

Credibility of Large-scale Language Models and their Application to Knowledge Based Dialogue Models

FUNDED BY NAVER CLOVA AI RESEARCH

June. 2021 - Current

- Developing Factual Consistency Evaluation and Optimization System
- Developing a Personalized Dialog System
- Published a Paper at NAACL 2022

Factual Error Correction on Grounded Text Generation Systems

FUNDED BY ADOBE RESEARCH

Feb. 2021 - Feb. 2022

- Developed Factual Error Correction System for Abstractive Summarization Systems
- Submitted a Paper

Knowledge-Grounded Conversational Question Answering System

FUNDED BY HYUNDAI MOTORS GROUP AIRS COMPANY

Sep. 2020 - Current

- Constructed Korean Conversational QA Dataset
- Published a Paper at AAAI 2021 Workshop

Evaluation Metric for Grounded Text Generation Systems

FUNDED BY ADOBE RESEARCH

Dec. 2019 - Jan. 2021

- Developed Evaluation Metrics for Generative QA and Image Captioning
- Published Four Papers at ACL 2021, NAACL 2021, EMNLP 2021 and EMNLP 2020 Workshop

Deep Learning Based Context-awareness Dialog System

FUNDED BY SAMSUNG ADVANCED INSTITUTE OF TECHNOLOGY

May. 2019 - May. 2020

- Developed a Multimodal Dialog System
- Published a Paper at AAAI 2020 Workshop

Global Internet Big Text Data Monitoring

FUNDED BY MINISTRY OF TRADE, INDUSTRY AND ENERGY

Jan. 2018 - June. 2020

- Developed Open Domain QA System and Question Generation System
- Published a Paper at AAAI 2019

Deep Learning Based Recommendation System

FUNDED BY LAONTRIP

Mar. 2017 - Dec. 2017

- Developed a Package Tour Recommendation System

Deep Learning Based Fraud Detection System

FUNDED BY KOREA CREDIT BUREAU

Mar. 2017 - Sep. 2017

- Developed a Fraud Detection System for Credit Card

Invited Talks

Korea Electronics Technology Institute

Seongnam, Korea

FACTUAL CONSISTENCY OF TEXT GENERATION SYSTEMS

Aug. 2022

Hyperconnect

Seoul, Korea

ASKING QUESTIONS TO EVALUATE AN IMAGE CAPTION

Jan. 2022

Kakao Enterprise

Seongnam, Korea

INTEGRATING KEYPHRASE WEIGHTS AND DATA AUGMENTATION FOR TEXT EVALUATION

Jan. 2022

Korea Software Congress 2021

Pyeongchang, Korea

TOP CONFERENCE SESSION FOR ARTIFICIAL INTELLIGENCE

Dec. 2021

Hyundai AIRLab

Seoul, Korea

INTEGRATING KEYPHRASE WEIGHTS FOR GENERATIVE QA EVALUATION

Dec. 2021

LG AI Research

Seoul, Korea

RECENT ADVANCES IN TEXT EVALUATION METRICS

July 2021

Academic Services

Reviewer

EMNLP 2022, COLING 2022, ACL 2022, EMNLP 2021, AAAI 2021, ACL 2021, SDU@AAAI 2021, EMNLP 2020

Teaching Experiences

Machine Learning

Seoul National University

TEACHING ASSISTANT

Spring 2019, Spring 2018

Programming Methodology

Seoul National University

TEACHING ASSISTANT

Spring 2022, Spring 2020, Spring 2017

Seminar on Deep Learning

Seoul National University

TEACHING ASSISTANT

Fall 2019

Introduction to IoT, Artificial Intelligence, Big Data

Seoul National University

TEACHING ASSISTANT

Fall 2019, Spring 2019, Fall 2018

Electrical Engineering Research Project

Seoul National University

TEACHING ASSISTANT

Fall 2020