

# HWANHEE LEE - 이환희

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## EDUCATION

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Ph.D. Candidate, Electrical and Computer Engineering, Seoul National University, 2017.03 - Present  
- Machine Intelligence Laboratory (Advisor: Kyomin Jung)

B.S., Electrical and Computer Engineering, Seoul National University, 2013.03 - 2017.02

## SCHOLARSHIPS AND AWARDS

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- Youlchon AI Star Scholarship, *Nongsim Youlchon Foundation*, 2021.09
- Scholarship from Foundation for Electronics, Electrical and Computer Engineering, *Granted by Seoul National University, Korea*, 2018 Spring
- Full Scholarship from National Science & Technology Scholarship, *Granted by Korea Student Aid Foundation*, 2013 Spring - 2016 Fall

## RESEARCH INTERESTS

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My research interest is in the field of Natural Language Processing and Machine Learning, especially about the following items.

- Text Evaluation
  - Metric for Generative Question Answering: Proposed an evaluation metric, KPQA-metric for generation question answering based on keyphrase weights. KPQA-metric shows dramatically higher correlation with human judgments of correctness than all of the previous metrics.  
**(published in NAACL 2021)**
  - Unreferenced Metric for Image Captioning: Proposed a reference-less metric UMIC, for image captioning that does not require any reference to evaluate a caption. UMIC shows higher correlation with human judgments than other metrics that require reference captions.  
**(published in ACL 2021, published in Eval4NLP 2020)**
- Conditional Sequence Generation
  - Neural Question Generation: Proposed a novel neural question generation model using an answer masking method and answer separation seq2seq model, named AsS2S. AsS2S shows state-of-the-arts performance in question generation tasks.  
**(published in AAAI 2019)**
  - Recommendation System: Proposed a novel sequential recommendation model, Entangled BART for Recommendation (E-BART4Rec) that entangles bidirectional encoder and auto-regressive decoder with noisy transformations for user interaction. Employed noisy transformation that imitates the real user's behaviors to the input of the encoder.

(published in SIGIR 2021)

- Language Grounding with Vision
    - Video Dialogue: Proposed Multimodal Semantic Transformer Network(MSTN) for video grounded dialog systems. MSTN uses word embedding attention network to focus on the semantic information of the multimodal context.
- (published in DSTC 2020)

## PUBLICATIONS

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### Conference Publications

1. M Lee, S Won, J Kim, **H Lee**, C Park, and K Jung, CrossAug: A Contrastive Data Augmentation Method for Debiasing Fact Verification Models, CIKM 2021, Virtual
2. **H Lee**, S Yoon, F Dernoncourt, T Bui, and K Jung, UMIC: An Unreferenced Metric for Image Captioning via Contrastive Learning, ACL 2021, Virtual
3. T Kang, **H Lee**, B Choe and K Jung, Entangled Bidirectional Encoder to Autoregressive Decoder for Sequential Recommendation, SIGIR 2021, Virtual
4. **H Lee**, S Yoon, F Dernoncourt, D Kim, T Bui, J Shin and K Jung, KPQA: A Metric for Generative Question Answering Using Keyphrase Weights, NAACL 2021, Virtual
5. S Yoon, S Dey, **H Lee** and K Jung, Attentive Modality Hopping Mechanism for Speech Emotion Recognition, ICASSP 2020, Virtual
6. Y Kim, **H Lee**, J Shin, K Jung, Improving Neural Question Generation using Answer Separation, AAAI 2019, Hawaii, USA

### Peer Reviewed Workshops

1. J Lee\*, H Lee\*, **H Lee**, K Jung, Learning to Select Question-Relevant Relations for Visual Question Answering, NAACL 2021 Workshop on Multimodal Artificial Intelligence (MAI), Virtual
2. H Bae, M Lee, A Kim, **H Lee**, C Lee, C Park, D Kim, K Jung, Relevance Similarity Scorer and Entity Guided Reranking for Knowledge Grounded Dialog System, AAAI 2021 Workshop on Dialog System Technology Challenge (DSTC), Virtual
3. **H Lee**, S Yoon, F Dernoncourt, D Kim, T Bui, K Jung, ViLBERTScore: Evaluating Image Caption Using Vision-and-Language BERT, EMNLP 2020 Workshop on Evaluation and Comparison of NLP Systems (Eval4NLP), Virtual
4. **H Lee**, S Yoon, F Dernoncourt, D Kim, T Bui and K Jung, DSTC8-AVSD: Multimodal Semantic Transformer Network with Retrieval StyleWord Generator, AAAI 2020 Workshop on Dialog System Technology Challenge (DSTC), New York City, USA

5. **H Lee** and K Jung, Insensibility of Question Word Order in Visual Question Answering, NAACL 2019 Workshop on Shortcomings in Vision and Language (SiVL), Minneapolis, USA
6. Y Kim, **H Lee**, K Jung, AttnConvnet at SemEval-2018-Task 1: Attention-based Convolutional Neural Networks for Multi-label Emotion Classification, NAACL 2018 Workshop on Semantic Evaluation(SemEval), New Orleans, USA

## RESEARCH PROJECTS

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- Credibility of Large-scale Language Models and their Application to Knowledge Based Dialogue Models, Seoul National University - *joint work with NAVER*, 2021.06 - Current
- Factual Error Correction on Grounded Text Generation Systems, Seoul National University - *joint work with Adobe Research*, 2021.02 - Current
- Knowledge-Grounded Conversational Question Answering System, Seoul National University - *joint work with Hyundai AIRLab*, 2020.09 - Current
- Evaluation Metric for Grounded Text Generation Systems, Seoul National University - *joint work with Adobe Research*, 2019.12 - 2021.01
- Deep Learning Based Context-awareness Dialog System, Seoul National University - *joint work with Samsung Advanced Institute of Technology*, 2019.05 - 2020.05
- Global Internet Big Text Data Monitoring, Seoul National University, 2019.01 - 2020.06
- Deep Learning Based Recommendation System, Seoul National University - *joint work with Laontrip*, 2017.03 - 2017.12
- Deep Learning Based Fraud Detection System, Seoul National University - *joint work with KCB*, 2017.03 - 2017.09

## TEACHING EXPERIENCES

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- Teaching Assistant, Programming Methodology, Seoul National University, 2020 Spring
- Teaching Assistant, Seminar on Deep Learning, Seoul National University, 2019 Fall
- Teaching Assistant, Machine Learning, Seoul National University, 2019 Spring
- Teaching Assistant, Machine Learning, Seoul National University, 2018 Spring
- Teaching Assistant, Programming Methodology, Seoul National University, 2017 Spring

## INVITED TALK

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- Recent Advances in Text Evaluation Metrics, LG AI Research, 2021.07

## ACADEMIC SERVICES

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- Reviewer of EMNLP 2021, AAAI 2021
- Sub-reviewer of ACL 2021, EMNLP 2020