

Hosung Park

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ABOUT ME

Current Ph.D student at Sogang University. My educational background is in Computer Science and Engineering. My research focuses on Automatic Speech Recognition in particular. I work to develop approaches for training more robust Deep Neural Networks for speech recognition, using end-to-end and hybrid learning.

EDUCATION

Mar. 2018 ~ Present	Sogang University Department of Computer Science and Engineering <i>Ph.D Student</i> <i>Advisor: Prof. Ji-Hwan Kim</i>	Seoul, Korea
Mar. 2016 ~ Feb. 2018	Sogang University Department of Computer Science and Engineering Thesis: Phoneme-to-text Conversion Based on Sequence-to-sequence Learning for Korean Continuous Speech Recognition System <i>Advisor: Prof. Ji-Hwan Kim</i> <i>Master of Science in Computer Science and Engineering</i>	Seoul, Korea
Mar. 2009 ~ Feb. 2016	Handong Global University Department of Computer Science and Engineering <i>Advisor: Prof. Hwan-Ki Yong</i> <i>Bachelor of Science in Computer Science and Engineering</i>	Pohang, Korea

RESEARCH EXPERIENCE

Mar. 2016 ~ Present	Research Assistant Research Assistant Awards: Google Cloud award from KB AI challenge, Best paper award from KCC 2020, Honor: Samil scholarship Key achievements: <ul style="list-style-type: none">• SGRRecognizer - streaming automatic speech recognizer.• Distant speech recognition for AI speaker• CNN-based audio event detection about 15 classes• TDNN-based acoustic model with self-attentive layer for Korean speech recognition• Automatic Korean grapheme-to-phoneme converter for speech recognition• Hybrid CTC-attention based end-to-end Korean speech recognition• Dialogue system integrated by speech recognition, speech synthesis, and question-answer model	Sogang University
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INDUSTRY EXPERIENCE

Jan. 2015 ~ Feb. 2015	Speech recognition research engineer - Internship Naver Labs <i>Award: Excellence award</i>	Seongnam, Korea
	Key achievements: <ul style="list-style-type: none">• API server for streaming automatic speech recognizer.	
Aug. 2013 ~ Aug. 2014	Microsoft Student Partners - Student ambassador Microsoft Korea <i>Award: 1st place and D2 award at Imagine Cup Korea 2014</i>	Seoul, Korea
	Key achievements: <ul style="list-style-type: none">• InFace – extracting identities from parents and their children's face.	

TEACHING EXPERIENCE

Sep. 2018 ~ Dec. 2018, Sep.2019~ Dec.2019	Consultant - AI Speech Technology Expert Course Samsung electronics	Yongin, Korea
	Key achievements: <ul style="list-style-type: none">• Consulting and teaching about automatic speech recognizer based on Kaldi toolkit• Consulting and teaching about automatic speech recognizer based on end-to-end manner.	
Feb. 2019, April.2019, Aug.2020	Teaching assistant - AI Speech Technology Expert Course LG electronics	Seoul, Korea
	Key achievements: <ul style="list-style-type: none">• Teaching about automatic speech recognizer based on Kaldi toolkit• Teaching about LF-MMI-based acoustic modeling for speech recognition.	

PUBLICATIONS (SCI ONLY)

1. Donghyun Lee, **Hosung Park**, Soonshin Seo, Hyunsoo Son, Gyujin Kim, and Ji-Hwan Kim, "Robustness of Differentiable Neural Computer Using Retention Vector-based Memory Deallocation in Language Model," *KSII Transactions on Internet and Information Systems*, 2020. (submitted)
2. Donghyun Lee, **Hosung Park**, Soonshin Seo, Changmin Kim, Hyunsoo Son, Gyujin Kim, and Ji-Hwan Kim, "Language Model Using Differentiable Neural Computer Based on Forget Gate-based Memory Deallocation," *Computers, Materials & Continua*, 2020. (under review)
3. **Hosung Park**, Soonshin Seo, Changmin Kim, Hyunsoo Son, Ji-Hwan Kim, "Hybrid CTC-attention network-based end-to-end speech recognition system for Korean language," *Journal of Web Engineering*, 2020. (under review)
4. Minkyu Lim, Donghyun Lee, **Hosung Park**, Yoseb Kang, Juneseok Oh, Jeong-Sik Park, Gil-Jin Jang, Ji-Hwan Kim, "Convolutional Neural Network based Audio Event Classification," *KSII Transactions on Internet and Information Systems*, Vol. 12, No. 6, 2018.
5. Donghyun Lee, Minkyu Lim, **Hosung Park**, Yoseb Kang, Jeong-Sik Park, Gil-Jin Jang, Ji-Hwan Kim, "Long Short-Term Memory Recurrent Neural Network-Based Acoustic Model Using Connectionist Temporal Classification On A Large-Scale Training Corpus," *China Communications*, Vol. 14, No. 9, pp. 23-31, 2017.

PUBLICATIONS (NON-SCI, 1ST AUTHOR ONLY)

1. **Hosung Park**, and Ji-Hwan Kim, “Acoustic Model Training Using Self-Attention For Low-Resource Speech Recognition,” *The journal of the Acoustical Society of Korea*, Vol. 39, No. 5, pp. 483-489, 2020. (SCOPUS)
2. **Hosung Park**, Yoseb Kang, Minkyu Lim, Donghyun Lee, Junseok Oh, and Ji-Hwan Kim, “LFMMI-Based Acoustic Modeling by Using External Knowledge,” *The journal of the Acoustical Society of Korea*, Vol. 38, No. 5, pp. 607-613, 2019. (SCOPUS)

INTERNATIONAL CONFERENCES (1ST AUTHOR ONLY)

1. **Hosung Park**, Soonshin Seo, Daniel Jun Rim, Changmin Kim, Hyunsoo Son, Jeong-Sik Park, and Ji-Hwan Kim, . “Korean Grapheme Unit-based Speech Recognition Using Attention-CTC Ensemble Network,” *Proceeding of International Symposium on Multimedia and Communication Technology (ISMATC)*, 2019.
2. **Hosung Park**, Donghyun Lee, Minkyu Lim, Yoseb Kang and Ji-hwan Kim, "The Scalable Load Balancing System for Speech Mining by Using Multiple Speech Recognizer," *Proceeding of the Oriental COCODA*, 2017.
3. **Hosung Park**, Eun Som Jeon, Minkyu Lim, Donghyun Lee, Yoseb Kang, Ji-Hwan Kim, “Multimodal Classification of Moving Vehicle based on convolutional neural network”, *The 4th International Conference on Electronics, Electrical Engineering, Computer Science*, 2017
4. **Hosung Park**, Eun Som Jeon, Minkyu Lim, Donghyun Lee, Unsang Park and Ji-hwan Kim, “Classification of Moving Vehicles Based On Convolutional Neural Network”, *The 3rd International Conference on Electronics, Electrical Engineering, Computer Science*, 2017
5. **Hosung Park**, Donghyun Lee, Minkyu Lim and Ji-hwan Kim, “Endpoint Detection Of Speech Signals For Android Applications,” *The 3rd International Conference on Electronics, Electrical Engineering, Computer Science*, 2017
6. **Hosung Park**, Minkyu Lim, Donghyun Lee, Jeong-Sik Park, and Ji-Hwan Kim, “Word Clustering Using Word Embedding Generated by Neural Net-based Skip Gram,” *The 2nd International Conference on Electronics, Electrical Engineering, Computer Science*, 2016

DOMESTIC CONFERENCES (1ST AUTHOR ONLY)

1. **Hosung Park**, Soonshin Seo, Hyunsoo Son, Changmin Kim, and Ji-Hwan Kim, “Self-attentive Layer for Discriminant Vector Training in Low-resource Speech Recognition,” *Proceeding of Korea Computer Congress*, 2020. - oral
2. **Hosung Park**, Donghyun Lee, Minkyu Lim, Yoseb Kang, Juneseok Oh, Soonshin Seo, Daniel Jun Rim, and Ji-Hwan Kim, “Hybrid CTC-Attention Based End-to-End Speech Recognition Using Korean Grapheme Unit,” *Annual Conference on Human and Language Technology*, 2018. – oral
3. **Hosung Park**, Donghyun Lee, Minkyu Lim, Yoseb Kang, Ji-Hwan Kim, "Implementation of Multi-Robot Speech Recognition Using Scalable Load Balancer", *Brain Engineering Society of Korea Symposium*, 2017 - poster

PATENTS

1. **Hosung Park**, Juneseok Oh, and Ji-Hwan Kim, “Server for Providing Corpus Building Service and Method Therefore”
Korea - Application No. 10-2020-0052570
2. **Hosung Park**, Hyunwook Kim, Jaeseong Lee, Chanhee Lee, “System and Method for Providing Image Monitoring Service Using Waste Smart Device”
Korea - Registration No. 10-16-81730
Korea – Application No. 10-2015-0086507

3. **Hosung Park**, Eunsom Jeon, Euijong Hwang, Sumin Lee, “System and Method for Searching Missing Family Using Facial Information and Storage Medium of Executing the Program”
Korea – Registration No. 10-17-431690000
Korea – Application No. 10-2014-0139857

AWARDS AND HONORS

2020	Google Cloud Award (3rd place), 2nd KB AI challenge
2020	Best Paper Award, Korea Computer Congress
2018 ~ 2019	Samil scholarship, The Samil Foundation
2015	3rd place, Handong Global University Capstone Competition
2015	Excellence Award, Naver Labs Internship
2014	1st place, Microsoft Imagine Cup Korea Final
2014	Naver D2 Award, Microsoft Imagine Cup Korea Final