David Seunghyun Yoon

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EDUCATION

Seoul National University, Seoul, Korea
Ph.D. Candidate in Department of Electrical and Computer Engineering — 2017 - 2020 (expected)
- Advisor: Professor Kyomin Jung

Seoul National University, Seoul, Korea
M.S. in Department of Electrical and Computer Engineering — Feb. 2017
- Advisor: Professor Kyomin Jung

Handong Global University, Pohang, Korea
B.S. in Electrical and Electronics Engineering, Mechanical Engineering (dual) — Feb. 2006

RESEARCH INTERESTS

Question Answering (QA) System
- Answer-selection
- Machine reading QA

Dialogue Model
- Language adaptation (personalization)
- Emotion recognition (multi-modal)

PROFESSIONAL EXPERIENCES

Researcher

Research scientist intern at **Adobe Research**, San Jose, US — Sep. 2018 – Dec. 2018
- Sentence-level answer selection for QA (paper, patent)
- Speech emotion recognition (paper, patent)

Staff Engineer at **Samsung Research**, Seoul, Korea — Feb. 2006 – Mar. 2017
- Information retrieval based QA system
- Social service platform (front-end, back-end)
- Concept-prototyping projects

Facilitator

Representative of employees, Hangajok Council at **Samsung Electronics**, Korea — Jan. 2012 – Jun. 2014
- Participated in labor-management consultation council

Trainer of Global New Employee Course at **Samsung Electronics**, Korea — Jan. 2011 – Jul. 2011
- Served as a trainer of Samsung "global new employee training course" (English)

Program Committee

NAACL (2019), ACL (2020), EMNLP (2019, 2020), AACL (2020)
AAAI (2020), INTERSPEECH (2019)

Journal Reviewer

Information Processing and Management, 2020
IEEE Signal Processing Letters, 2020

Teaching Assistant

Lab. Sentiment Analysis, BigCamp (Big Data Academy), **Big Data Institute**	2016-2019
Programming Methodology, **Seoul National University**	Spring 2018
Topics in Computer and VLSI (Machine Learning), **Seoul National University**	Fall 2015

Talks

Research in Natural Language Processing, **NVIDIA AI Conference**	Jul. 2019
QA-pair ranking algorithm and its applications, **Naver**	Aug. 2018
Advancement of the Neural Dialogue Model, **Fast Campus**	Jul. 2018

Google Conference and Travel Scholarships, for ICASSP-20 paper	2020
Google Conference and Travel Scholarships, for ICASSP-19 paper	2019
5th place / 71 teams, National AI R&D Fake News Challenge, Ministry of Science and ICT, Korea	2017
Scholarship for M.S. degree, Samsung Electronics	2015-2016
Best Paper Presentation, Korea Computer Congress	2014

[22] S Byun, **S Yoon**, K Jung, "Comparative Studies on Machine Learning for Paralinguistic Signal Compression and Classification," to appear in *Journal of Supercomputing*, 2020. (SCI, IF=2.157)

[21] J Shin, Y Lee, **S Yoon**, K Jung, "Fast and Accurate Deep Bidirectional Language Representations for Unsupervised Learning," to appear in *Annual Meeting of the Association for Computational Linguistics (ACL)*, 2020.

[20] **S Yoon**, F Dernoncourt, DS Kim, T Bui, K Jung, "Propagate-Selector: Detecting Supporting Sentences for Question Answering via Graph Neural Networks," in *Proc. of the International Conference on Language Resources and Evaluation (LREC)*, 2020.

[19] H Kwak, M Lee, **S Yoon**, J Chang, S Park, K Jung, "Drug-disease Graph: Predicting Adverse Drug Reaction Signals via Graph Neural Network with Clinical Data," in *Proc. of the Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, 2020. (Oral Presentation, Acceptance Rate=21%)

[18] **S Yoon**, S Dey, H Lee, K Jung, "Attentive Modality Hopping Mechanism for Speech Emotion Recognition," in *Proc. of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2020. (Oral Presentation)

[17] H Lee, **S Yoon**, K Jung, "DSTC8-AVSD: Multimodal Semantic Transformer Network with Retrieval Style Word Generator," in *Proc. of the AAAI Conference on Artificial Intelligence (AAAI) Workshop on DSTC8*, 2020.

[16] K Park, T Kim, **S Yoon**, M Cha, K Jung, "BaitWatcher: A lightweight web interface for the detection of incongruent news headlines," in *Fake News, Disinformation, and Misinformation in Social Media-Emerging Research Challenges and Opportunities*, Springer, 2020.

[15] **S Yoon**, F Dernoncourt, DS Kim, T Bui, K Jung, "A Compare-Aggregate Model with Latent Clustering for Answer Selection," in *Proc. of the ACM International Conference on Information and Knowledge Management (CIKM)*, 2019. (Oral Presentation, Acceptance Rate=21%)

[14] J Nam, **S Yoon**, K Jung, "Surf at mediqa 2019: Improving performance of natural language inference in the clinical domain by adopting pre-trained language model.," in *Proc. of Association for Computational Linguistics (ACL) Workshop on BioNLP*, 2019.

[13] **S Yoon**, S Byun, S Dey, K Jung, "Speech Emotion Recognition Using Multi-hop Attention Mechanism," in *Proc. of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2019. (Oral Presentation)

[12] S Byun, **S Yoon**, K Jung, "Neural Networks for Compressing and Classifying Speaker-Independent Paralinguistic Signals," in *Proc. of the IEEE International Conference on Big Data and Smart Computing (BigComp)*, 2019. (Oral Presentation)

[11] **S Yoon**, K Park, J Shin, H Lim, S Won, M Cha, K Jung, "Detecting Incongruity Between News Headline and Body Text via a Deep Hierarchical Encoder," in *Proc. of the AAAI Conference on Artificial Intelligence (AAAI)*, 2019. (Oral Presentation, Acceptance Rate=16%)

[10] **S Yoon**, S Byun, K Jung, "Multimodal Speech Emotion Recognition uing Audio and Text," in *Proc. of the IEEE Workshop on Spoken Language Technology (SLT)*, 2018.

[9] Y Lee, **S Yoon**, K Jung, "Comparative Studies of Detecting Abusive Language on Twitter," in *Proc. of Empirical Methods in Natural Language Processing (EMNLP) Workshop on Abusive Language Online*, 2018.

[8] **S Yoon**, J Shin, K Jung, "Learning to Rank Question-Answer Pairs using Hierarchical Recurrent Encoder with Latent Topic Clustering," in *Proc. of Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*, 2018. (Acceptance Rate=31%)

[7] J Shin, Y Kim, **S Yoon**, K Jung, "Contextual-CNN: A Novel Architecture Capturing Unified Meaning for Sentence Classification," in *Proc. of the IEEE International Conference on Big Data and Smart Computing (BigComp)*, 2018. (Oral Presentation)

[6] **S Yoon**, P Estrada, K Jung, "Synonym Discovery with Etymology-based Word Embeddings," in *Porc. of the IEEE Symposium Series on Computational Intelligence (SSCI)*, 2017.

[5] **S Yoon**, H Yun, Y Kim, G Park, K Jung, "Efficient Transfer Learning Schemes for Personalized Language Modeling using Recurrent Neural Network," in *Proc. of the AAAI Conference on Artificial Intelligence (AAAI) Workshop on Crowdsourcing, Deep Learning and Artificial Intelligence Agents*, 2017.

[4] **S Yoon**, M Sundar, A Gupta, K Jung, "Automatic Question Answering System for Consumer Products," in *Proc. of SAI Intelligent Systems Conference. Springer, Cham*, 2016.

[3] K Park, J Kim, J Park, M Cha, J Nam, **S Yoon**, E Rhim, "Mining the Minds of Customers from Online Chat Logs," in *Proc. of the ACM International on Conference on Information and Knowledge Management (CIKM)*, 2015. (Acceptance Rate=21%)

[2] **S Yoon**, E Rhim, D Kim, "Domain Question Answering System," in *KIISE Transactions on Computing Practices*, 2015.

[1] **S Yoon**, K Lee, H Shin, "Media clips: Implementation of an intuitive media linker," in *Proc. of IEEE International Symposium on Broadband Multimedia Systems and Broadcasting (BMSB)*, 2011.

PATENTS

[8] Y Kim, O Kwon, S Kim, H Oh, **S Yoon** S Cha, J Lee, "Terminal apparatus, server and method of controlling the same," ***issued patent***, *US 10,084,850, AU2014200631B2, CN104104766A*, Sep. 25, 2018

[7] J Nam, M Lee, M Koo, **S Yoon**, "Method of recommending application, mobile terminal using the method, and communication system using the method," ***issued patent***, *US 9,247,376*, Jan. 26, 2016

[6] **S Yoon**, M Lee, "Method and apparatus for displaying photo on screen having any shape," ***issued patent***, *US 9,049,383*, Jun. 2, 2015

[5] **S Yoon**, M Lee, M Koo, J Nam, "Method and apparatus for providing information and computer readable storage medium having a program recorded thereon for executing the method," ***issued patent***, *US 8,958,824*, Feb. 17, 2015

[4] **S Yoon**, S Kim, "Method and apparatus for fast tracking position by using global positioning system," ***issued patent***, *US 8,094,070*, Jan. 10, 2012

[3] Y Won, **S Yoon**, O Kwon, M Kim, H Oh, S Lee, S Cha, "User terminal device, information providing system, and method for providing information," *pending patent, US 14/511,506*, Oct. 10, 2014

[2] **S Yoon**, M Lee, M Koo, J Nam, "Apparatus and method for clipping and sharing content at a portable terminal," *pending patent, US 13/629,394, CN108133057A, EP3370172A1, WO2013048091A2*, Sep. 27, 2012

[1] K Kim, J Lee, W Park, H Shim, Y Park, M Lee, M Koo, **S Yoon**, J Nam, "Method and apparatus for connecting devices," *pending patent, US 13/452,766, EP2515505A1, WO2012144757A2, KR101894389B1*, Apr. 20, 2012

PATENTS
KOREAN

[8] K Jung, **S Yoon**, J Shin, H Kwak, S Byun, "Artificial intelligence based dialog system and response control method thereof," ***issued patent***, *KR 10-2059015*, Dec. 18, 2019

[7] Y Kim, O Kwon, S Kim, H Oh, **S Yoon**, S Cha, J Lee, "Terminal apparatus, server and method of controlling the same," ***issued patent***, *KR 10-1832394*, Feb. 20, 2018

[6] **S Yoon**, J Nam, M Koo, M Lee, "Apparatus and method for collecting information of destination in portable terminal," ***issued patent***, *KR 10-1914632*, Oct. 29, 2018

[5] **S Yoon**, M Lee, M Koo, J Nam, "Method and apparatus for providing information, and computer readable storage medium," ***issued patent***, *KR 10-1773167*, Aug. 24, 2017

[4] J Nam, M Lee, M Koo, **S Yoon**, "Method for recommendation of application, mobile terminal thereof and communication system thereof," ***issued patent***, *KR 10-1747303*, Jun. 8, 2017

[3] K Jung, J Shin, **S Yoon**, "Apparatus and method for evaluating sentense by using bidirectional language model," *pending patent, KR1020190165712*, Dec. 12, 2019

[2] E Rhim, J Kim, J Nam, **S Yoon**, K Park, J Park, M Cha, "Device and method for analyzing user emotion," *pending patent, PCT/KR1020160058782*, May. 13, 2016

[1] **S Yoon**, S Lee, O Kwon, M Kim, H Oh, Y Won, S Cha, "Method and apparatus for changing personal information," *pending patent, KR1020130122222*, Oct. 14, 2013

Skills Excellence in Programming Languages: Java, C++, Python

Excellence in Deep Learning Framework: TensorFlow, PyTorch

Fluency in front-end sever design: Apache Tomcat, Spring Framework, AWS, Linux

Familiarity with back-end sever design: NoSQL