

# David Seunghyun Yoon

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Mobile: +82-10-2223-0901  
E-mail: [mysmilesh@gmail.com](mailto:mysmilesh@gmail.com)  
<http://david-yoon.github.io>

EDUCATION	<p><b>Seoul National University</b>, Seoul, Korea <i>Ph.D. Candidate in Department of Electrical and Computer Engineering</i> 2017 - 2020</p> <ul style="list-style-type: none"><li>• Advisor: Professor Kyomin Jung</li></ul> <p><b>Seoul National University</b>, Seoul, Korea <i>M.S. in Department of Electrical and Computer Engineering</i> Feb. 2017</p> <ul style="list-style-type: none"><li>• Advisor: Professor Kyomin Jung</li></ul> <p><b>Handong Global University</b>, Pohang, Korea <i>B.S. in Electrical and Electronics Engineering, Mechanical Engineering (dual)</i> Feb. 2006</p>
RESEARCH INTERESTS	<p><b>Question Answering (QA) System</b></p> <ul style="list-style-type: none"><li>• Answer-selection</li><li>• Machine reading QA</li></ul> <p><b>Dialogue Model</b></p> <ul style="list-style-type: none"><li>• Language adaptation (personalization)</li><li>• Emotion recognition (multi-modal)</li></ul>
PROFESSIONAL EXPERIENCES	<p><b>Researcher</b></p> <p>Research scientist intern at <b>Adobe Research</b>, San Jose, US Sep. 2018 – Dec. 2018</p> <ul style="list-style-type: none"><li>• Sentence-level answer selection for QA (paper, patent)</li><li>• Speech emotion recognition (paper, patent)</li></ul> <p>Staff Engineer at <b>Samsung Research</b>, Seoul, Korea Feb. 2006 – Mar. 2017</p> <ul style="list-style-type: none"><li>• Information retrieval based QA system</li><li>• Social service platform (front-end, back-end)</li><li>• Concept-prototyping projects</li></ul> <p><b>Facilitator</b></p> <p>Representative of employees, Hangajok Council at <b>Samsung Electronics</b>, Korea Jan. 2012 – Jun. 2014</p> <ul style="list-style-type: none"><li>• Participated in labor-management consultation council</li></ul> <p>Trainer of Global New Employee Course at <b>Samsung Electronics</b>, Korea Jan. 2011 – Jul. 2011</p> <ul style="list-style-type: none"><li>• Served as a trainer of Samsung “global new employee training course” (English)</li></ul>

ACADEMIC  
ACTIVITIES

**Program Committee**

NAACL-19, EMNLP-19, INTERSPEECH-19, AAAI-20, ACL-20

**Journal Reviewer**

Information Processing and Management, 2020

**Teaching Assistant**

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

**Talks**

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

HONORS AND  
AWARDS

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

PUBLICATIONS

- [20] **S Yoon**, F Deroncourt, DS Kim, T Bui, K Jung, "Propagate-Selector: Detecting Supporting Sentences for Question Answering via Graph Neural Networks," to appear in *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," to appear in *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," to appear in *the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2020. (Oral Presentation)
- [17] H Lee, **S Yoon**, K Jung, "DSTC8-AVSD: AVSD with Word Embedding Attention Network," 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 Deroncourt, 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 using 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 *Proc. 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 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.

#### SKILLS

Excellence in Programming Languages: Java, C++, Python  
 Excellence in Deep Learning Framework: TensorFlow, PyTorch  
 Fluency in front-end server design: Apache Tomcat, Spring Framework, AWS, Linux  
 Familiarity with back-end server design: NoSQL

#### 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
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- [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 sentence 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