

# Seongjin Park | Curriculum Vitae

✉ contact@seongjinpark.com • ↗ Google Scholar Page • As of Feb. 10, 2026

## Research Interests

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- Experimental phonetics
  - Automatic speech recognition
  - Computational Linguistics
  - Automatic speech scoring
  - Second language acquisition
  - Natural Language Processing

## Education

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### Ph.D. in Linguistics

*University of Arizona, Tucson, AZ, USA* 2016–2021  
Department of Linguistics  
Dissertation: Human and machine judgment on non-native speakers' proficiency  
Advisor: Dr. Natasha Warner  
Dissertation committee: Dr. Natasha Warner (Chair), Dr. Mike Hammond, Dr. Mihai Surdeanu

### M.S. in Human Language Technology

*University of Arizona, Tucson, AZ, USA* 2019–2019  
Department of Linguistics  
Internship Report: Geographic Time and Site Identification, and Document Classification  
Internship committee chair: Dr. Mike Hammond  
Internship supervisor: Dr. Mihai Surdeanu

### M.A. in English Linguistics

*Hankuk University of Foreign Studies, Seoul, South Korea* 2014–2016  
Department of English Linguistics  
Thesis title: Acoustic cues to perception of English intervocalic liquids by Korean EFL learners  
Advisor: Dr. Tae-Yeoub Jang  
Thesis committee: Dr. Sung-Hoon Hong (Chair), Dr. Jee Eun Kim, Dr. Tae-Yeoub Jang

### B.A. in English Linguistics

*Hankuk University of Foreign Studies, Seoul, South Korea* 2007–2014  
College of English, Department of English Linguistics

## Work & Experience

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### Machine Learning Engineer - Voice

*Speak* July. 2025 – Present  
Speak  
Work within learning technology team to research and develop speech capabilities for language learning products.  
Main/lead researcher and key collaborator for capabilities including:

- Multilingual automatic speech recognition and phoneme recognition systems for learner pronunciation analysis across multiple target languages
- Real-time audio processing pipelines optimized for low-latency streaming inference
- Voice agent architectures for interactive, AI-driven speaking practice and conversational tutoring
- Speech scoring and automated feedback generation models for fine-grained learner assessment

**Research Scientist - NLP***Educational Testing Service (ETS)*

ETS AI Labs

*Aug. 2021 – July 2025*

Lead wearable team to research and develop speech capabilities for wearable devices to measure everyday language use. Research and develop 20+ text and speech capabilities for language-learning prototypes and products as a main/lead researcher and key collaborator including:

- Analyze the patterns of non-native speakers' speech to provide pronunciation feedback for the language learning application.
- Develop automatic feedback generation system for language learners as well as native speakers of English in different environment (workplace, travel, job application, etc).
- Develop automatic speech recognition system and automatic speech scoring models for English language learners.
- Benchmark off-the-shelf speech models (Wav2Vec2, HuBERT, Whisper, NeMO, Microsoft Azure, Google Speech, etc) on speech-related task including automatic speech recognition, emotion recognition, speech scoring, and speaker diarization.
- Disseminate R&D results by publishing papers and presenting at the NLP and speech conferences.

**Graduate Teaching Associate***University of Arizona**Jan. 2021 – May 2021*

Department of Linguistics

Supervisor: Dr. Gus Hahn-Powell

Teaching assistant for LING439 (Statistical natural language processing)

Develop an online materials for the course.

Create mastery and coding questions for the course.

Conducted code reviews and provided feedbacks.

**Graduate Teaching Associate***University of Arizona**Jan. 2021 – May 2021*

Department of Linguistics

Supervisor: Dr. Amy V. Fountain

Section leader for LING150 (Language in the world)

Develop discussion topics and help students to create their own language.

**Graduate Research Associate (Speech Scientist)***University of Arizona**Aug. 2020 – May 2021*

Department of Linguistics

Supervisor: Dr. Rebecca Sharp

This research received funding from DARPA.

Build a model for multi-modal sentiment and emotion analysis.

Evaluate the performance of existing automatic speech recognition tools.

Build sentiment analysis models using low-level acoustic features.

**Expert language grammar author and consultant (Computational Linguist)***Lausanne Business Solutions**May 2020 – Aug. 2020*

Writing grammars for automatic speech recognition using Amazon AWS.

Wrote and examine basic grammars for following languages: Korean, Chinese, Dutch, Italian, Spanish, Polish, Swedish, Japanese

**Graduate Research Associate (Computational Linguist)***University of Arizona**Dec. 2018 – May. 2020**Computational Language Understanding Lab*, Department of Computer Science

Supervisor: Dr. Mihai Surdeanu

Build a text classification model to categorize collected data.

Write a grammar to recognize spatial and temporal expressions in the data.

## **Graduate Research Assistant (Phonetician)**

*University of Arizona*

*Aug. 2016 – Jan. 2019*

*Douglass Phonetics Lab, Department of Linguistics*

*Supervisor: Dr. Natasha Warner*

*Conduct speech production and perception experiment.*

*Examine the difference between read speech and spontaneous speech.*

*Analyze the results of previous and current experiments.*

*Supervise undergraduate researchers.*

## **Instructor**

*Hankuk University of Foreign Studies*

*Jun. 2018*

*Language Technology Research Institute*

*Teaching a summer workshop "Automatic speech recognition with Kaldi / Linguistic research using machine learning and deep learning"*

## **Instructor**

*Hankuk University of Foreign Studies*

*Jun. 2017*

*Language Technology Research Institute*

*Teaching a summer workshop "Programming Workshop: Data analysis with Python and Praat". (June 19 – 28, 2017).*

## **Teaching Assistant**

*Hankuk University of Foreign Studies*

*Mar. 2014 – Feb. 2016*

*Foreign Language Education Center*

*Supervisor: Dr. Jee Eun Kim (Mar. 2014 – Aug. 2014), Dr. Won Jun Nam (Sep. 2014 – Feb. 2016)*

## **Publications & Presentations**

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### **Manuscripts in Preparation:**

- **Seongjin Park.** (nearing submission). Use of automatic proficiency judgment system for linguistic experiment.
- **Seongjin Park.** (nearing submission). Effects of temporal information on proficiency judgment.

### **Published Journal Papers:**

- **Seongjin Park**, Natasha Warner. 2023. The role of probability and duration on speech perception. *Speech Communication* 152: 102950.
- **Seongjin Park**, Mihai N. Ducea, Barbara Carrapa, Mihai Surdeanu, Robert Hayes, & Dan Collins. 2022. Answering Geosciences Research Questions at a Global Scale via a Hybrid Machine-Human Learning Approach: A Case Study of the Link between Climate and Volcanism. *GSA (Geological Society of America) Today* 32.
- **Seongjin Park**, & Tae-Yeoub Jang. 2016. Acoustic characteristics of English liquids produced by Korean learners of English. *Studies in Phonetics, Phonology and Morphology* 22(2): 289-315.
- **Seongjin Park**, & Tae-Yeoub Jang. 2016. Perception of English intervocalic liquids by Korean learners of English. *Language and Linguistics* 71:53-78.

### **Published Conference Proceedings:**

- **Seongjin Park**, & Rutuja Ubale. 2023. Multitask learning model with text and speech representation for fine-grained speech scoring. *2023 IEEE Automatic Speech Recognition and Understanding Workshop (ASRU)*. Taipei, Taiwan.
- **Seongjin Park**, Aaron Albin, Rutuja Ubale. 2023. A punctuation restoration system for L2 speech using text and acoustic features. in *Proceedings of SLATE 2023: 9th ISCA Workshop on Speech and Language Technology in Education*. Dublin, Ireland.
- **Seongjin Park**. 2023. Interpretation of speech rhythm: Speech error, speech rhythm, and speech proficiency. in *Proceedings of the 184th Meeting of the Acoustical Society of America*. Chicago, IL. USA.
- John Culnan, **Seongjin Park**, Meghavarshini Krishnaswamy, & Rebecca Sharp. 2021. Me, myself, and ire: Effects of automatic transcription quality on emotion, sarcasm, and personality detection. in *Proceedings*

*of the 11th Workshop on Computational Approaches to Subjectivity, Sentiment & Social Media Analysis* (2021 WASSA), 250-256. Association for Computational Linguistics.

- **Seongjin Park**, & John Culnan. 2021. Automatic proficiency judgments: Accentedness, fluency, and comprehensibility. in *Proceedings of 181th meeting of the Acoustical Society of America*. Seattle, WA. USA.
- **Seongjin Park**, & John Culnan. 2020. The relationship between word error rate and perceptual judgment. in *Proceedings of 179th meeting of the Acoustical Society of America*. Virtual conference.
- John Culnan, & **Seongjin Park**. 2019. The impact of language transfer on native speaker recognition of native and non-native speech. in *Proceedings of 178th Meeting of the Acoustical Society of America*. San Diego, CA. USA.
- **Seongjin Park**, & John Culnan. 2019. Automatic perceptual judgment using neural networks. in *Proceedings of 178th Meeting of the Acoustical Society of America*. San Diego, CA. USA.
- **Seongjin Park**, & John Culnan. 2019. A comparison between native and non-native speech for automatic speech recognition. in *Proceedings of 177th Meeting of the Acoustical Society of America*. Louisville, KY. USA.
- **Seongjin Park**, Shiloh Drake, Richard A. Southee, Dongdong Zhang, Natasha Warner, & James M. McQueen. 2019. A replication of a test of the metrical segmentation strategy in spoken word recognition. in *Proceedings of 177th Meeting of the Acoustical Society of America*. Louisville, KY. USA.
- Natasha Warner, & **Seongjin Park**. 2018. Spontaneous speech in the teaching of phonetics and speech perception. in *Proceedings of The 2nd International Symposium on Applied Phonetics (ISAPh 2018)*, 32-38. University of Aizu, Fukushima. Japan.
- Natasha Warner, & **Seongjin Park**. 2018. Conversational Speech Reduction across Languages, Second Languages, and Dialects. in *Proceedings of Hanyang International Symposium on Phonetics and Cognitive Sciences of Language 2018 (HisPhonCog 2018)*, 20-21. Hanyang Institute for Phonetics and Cognitive Sciences of Language. Seoul. Korea.
- **Seongjin Park**, & Natasha Warner. 2018. The Role of Within-Category Duration Differences in Speech Perception. in *Proceedings of Hanyang International Symposium on Phonetics and Cognitive Sciences of Language 2018 (HisPhonCog 2018)*, 79-80. Hanyang Institute for Phonetics and Cognitive Sciences of Language. Seoul, South Korea.
- Natasha Warner, Genesis Hernandez, **Seongjin Park**, & James M. McQueen. 2018. A replication of competition and prosodic effects on spoken word recognition. in *Proceedings of 175th Meeting of the Acoustical Society of America*. Minneapolis, MN. USA.
- **Seongjin Park**, Maureen Hoffmann, Priscilla Shin, & Natasha Warner. 2018. The role of segment probability in perception of speech sounds. in *Proceedings of 175th Meeting of the Acoustical Society of America*. Acoustical Society of America. Minneapolis, MN. USA.
- Cheonkam Jeong, & **Seongjin Park**. 2018. A Corpus-based Study on the Prosodic Features of *com* in Korean. *The 92nd Annual Meeting of the Linguistic Society of America*. Linguistic Society of America, Salt Lake City, UT, USA
- Cheonkam Jeong, & **Seongjin Park**. 2017. The role of prosody in discourse: A case study of Korean *com*. in *Proceedings of Seoul International Conference on Speech Sciences (SICSS 2017)*, 109-110. The Korean Society of Speech Sciences. Seoul, South Korea.
- **Seongjin Park**, & Tae-Yeoub Jang. 2015. Acoustic Cues to Perception of English Intervocalic Liquids ([l], [r]) by Korean EFL Learners. in *Proceedings of 2015 International Conference on Speech Sciences (ICSS 2015)*, 179-180. The Korean Society of Speech Sciences. Seoul, South Korea.

#### Conference Presentations & Posters:

- **Seongjin Park**. 2018. Speech-act classification: observation vs. opinion. *Computational Social Science Mini-Conference*, The University of Arizona, USA.
- **Seongjin Park**, Maureen Hoffman, Priscilla Shin, Natasha Warner. 2017. The role of probability in perception of speech. *8th Annual ASUofA Cognitive Science Conclave*, The University of Arizona, USA.
- Miguel Simonet, Natasha Warner, Dan Brenner, **Seongjin Park**, Maureen Hoffman, & Benjamin V. Tucker. 2017. Processing reduced speech in a second language. *Conversational Speech and Lexical Representations*, Radboud University, Nijmegen. Netherlands.
- Natasha Warner, Miguel Simonet, Dan Brenner, **Seongjin Park**, Maureen Hoffman, Mirjam Ernestus, &

- Benjamin V. Tucker. 2017. Comparison of careful vs. conversational speech in Dutch, English, and L2 English. *Conversational Speech and Lexical Representations*, Radboud University Nijmegen. Netherlands.
- Natasha Warner, **Seongjin Park**, Dan Brenner, Benjamin V. Tucker, & Miguel Simonet. 2016. Processing reduced speech across languages and dialects. *7th Annual ASUofA Cognitive Science Conclave*, Arizona State University, USA.

## Journal and conference reviewer

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**Workshop on Speech and Language Technology in Education (SLaTE)**: Reviewer

**INTERSPEECH**: Reviewer

**Journal of Acoustical Society of America**: Reviewer

**Journal of Acoustical Society of America Express Letters**: Reviewer

**Arizona Linguistics Circle Conference**: Reviewer

**Coyote Paper**: Reviewer

## Service

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### Organizer

*All about speech reading group*

*Jul. 2022 - May 2023*

Organized the reading group to share the knowledge on speech-related topics in linguistics and computer sciences

### Conference Volunteer

*Department of Linguistics, University of Arizona*

*2016, 2017, 2018, 2019*

*Arizona Linguistics Circle*

### Volunteer

*Department of Linguistics, University of Arizona*

*2016, 2017, 2018, 2019*

*Meet Your Major Fair*

### Consultant

*Vox*

*Feb. 2019*

Provide phonetic knowledge for "Why some Asian accents swap Ls and Rs in English"

### Volunteer Instructor

*Department of English Linguistics, Hankuk University of Foreign Studies*

*Jan. 2016, Jun. 2016*

*Graduate student seminar*

### Volunteer Instructor

*Seoul Companion*

*Mar. 2014 – Jun. 2014*

*Teacher for underrepresented students*

### Air traffic controller

*R.O.K. Army*

*Mar. 2009 – Jan. 2011*

## Programming/General Skills

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**Programming Languages**: Perl, Python, R, Bash/Shell, Scala, Praat (from scratch); familiar with C, C++, Matlab and Java (can read and tweak)

**ASR/Machine Learning libraries**: PyTorch, Kaldi, ESPNet, NeMO, Whisper, Keras, SpeechBrain, Huggingface, NLTK, Scikit-learn, SpaCy

**General**:  $\text{\LaTeX}$ , Linux (Ubuntu), MacOS, Git/Github/Gitlab, Windows/Windows-WSL

## **Honors & Awards**

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### **Recognition Award**

*Product, Innovation and Development, Educational Testing Service (ETS)* Mar. 2024

### **Second place**

*Valentine AI Hackathon 2024, Educational Testing Service (ETS)* Feb. 2024

### **Miyagawa Travel Scholarship**

*Department of Linguistics, University of Arizona* Dec. 2019

### **Departmental Travel Funding**

*Department of Linguistics, University of Arizona* May 2019

### **Research and Project Grant**

*Graduate & Professional Student Council, University of Arizona* Apr. 2019

### **Departmental Travel Funding**

*Department of Linguistics, University of Arizona* May 2018

### **Graduate Research Scholarship for Humanities and Social Sciences**

*Korean Student Aid Foundation* Mar. 2015

### **Graduate Research Scholarship for Humanities and Social Sciences**

*Korean Student Aid Foundation* Sep. 2015

## **Professional Affiliations**

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**International Speech Communication Association:** 2022 -

**Acoustical Society of America:** 2017 -

## **Languages**

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**Korean (Native), English (Professional fluency)**