

MEGHAVARSHINI KRISHNASWAMY

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OBJECTIVE

I am a computational linguist and phonetician. I am interested in an interdisciplinary research career and mentorship role, where I can work with language and behavioural data, and apply computational methods. I want to mentor the next generation of scientists, with a focus on data science principles, project management, and quantitative and qualitative methods for human subject data collection. I aim to add to their knowledge and experience in experimental and applied linguistics.

EDUCATION

- **University of Arizona** Aug 2019–Present
PhD, Linguistics Tucson Arizona, USA
 - GPA: 3.9/4.00
- **University of Arizona** Aug 2019–May 2021
MS, Human Language Technology Tucson Arizona, USA
 - GPA: 3.9/4.00
- **The English and Foreign Languages University** July 2013–May 2015
MA, Linguistics Hyderabad, India
 - GPA: 72.9%
- **University of Delhi** July 2010–June 2013
BA (Hons.), English New Delhi, India
 - Score: 59.8%, II-Division

ACADEMIC RESEARCH EXPERIENCE

- **Data Science Institute** [🌐] Aug 2023–Present
Graduate Research Assistant (educator and consultancy) Tucson, USA
 - Designed and delivered technical workshops encompassing NLP [🌐], python programming, command line interface proficiency, version control, High Performance Computing (HPC), and AI tools for research.
 - Collaborated in creating a language processing pipeline for quantum NLP applications in low-resource languages.
 - Spearheaded a collaboration with computational linguistics faculty, for improving HPC understanding and knowledge.
 - Provided consulting services for university research projects (data science and NLP), for the successful execution and optimization of these projects.
- **DARPA ASIST-ToMCAT Project (NLP)** [🌐] May 2020 - Dec 2022
Graduate Research Assistant Tucson
 - Designed and enhanced existing unsupervised neural network models for detecting speech synchrony/entrainment [🌐].
 - Contributed code, research insights, and qualitative assessments for vocal feature extraction using OpenSMILE, Praat and Python.
 - Reported on the viability of different voice recording platforms for collecting human subject data and automatic transcriptions, and performed quality assessments.
 - Performed literature reviews and assessed datasets for multimodal sentiment and emotion classification projects.

- Provided documentation and writing for effective communication of our research findings for DARPA Principal Investigators (PIs) Meetings and Github documentation.
 - Contributed research to publications presented at NeurIPS and ICML.
- **Douglass Phonetics Lab (applied linguistics)** [🌐] Jan 2020 - Dec 2020
Tucson
Graduate Research Assistant
- Coordinated the lab's ongoing phonetics experiments and data collection.
 - Initiated the migration of the lab's experiments to remote platforms (like Finding Five) during the pandemic, and assessed their viability.
 - Provided training and technical support to undergraduate researchers.
 - Contributed documentation for the data exploration and statistical analysis.
 - Conducted transcription and extraction of phonetic data on Praat.
- **SPLANG Phonetics Lab (phonetics and psycholinguistics), EFL University** Oct 2017 - Aug 2019
Hyderabad, India
Research Associate
- Designed and conducted acoustic phonetics experiments for languages such as Bengali, Mongolian, Malayalam and Hindi.
 - Conducted corpus analysis and qualitative assessments on multi-lingual internet corpora to find stimuli for experiments.
 - Created audio stimuli using Praat and ffmpeg for eye-tracking experiments and perception tasks
 - Wrote R and Python scripts for statistical analysis and data visualisation.
 - Co-authored papers, conference posters, research proposals and presentations.
 - Provided training to students for experimental modalities such as ultrasound, eye-tracking, and speech perception and production.
 - Managed administrative tasks such as purchase requests, lab equipment setup, documentation for datasets, scheduling lab activities, and drafting the lab's budget and spending.

TEACHING EXPERIENCE

- **LING314: Phonetics, [Instructor on record]** Jan 2023 - May 2023
Tools: D2L, Praat, Qualtrics [🌐]
- Introduced core topics in phonetic science and the articulation, acoustic processing, and perception of human speech, with a focus on the prosodic properties and the phonetic structure of different dialects of English.
 - Taught the fundamentals of transcribing sound patterns with the International Phonetic Alphabet and the terminology for phonetic features.
 - Lead lab sessions to collect, process, and analyze acoustic features, and read spectrograms for different consonants and vowels.
- **LING432 (5-week, online), Psychology of Language [Instructor on record]** Summer 2022 and 2023
Tools: D2L, Panopto [🌐]
- Introduced topics in language processing.
 - Created teaching materials on comprehension and production of sounds, words, and sentences, and the psychological processes involved.
 - Lead discussions on bilingual processing, speech errors, and artificial speech.
 - Designed student assignments and quizzes, and provided feedback on academic writing.
 - Recorded weekly lectures on Panopto.
- **LING150, Language and the World [Grader]** Aug - Dec 2019
Tools: D2L, Panopto, MS Office suite [🌐]
- Conducted weekly section meetings and office hours.
 - Provided detailed feedback and evaluation on student's assignments.
 - Supported students with the design of a constructed language and documenting its grammar.

• Teach for India, Hyderabad

May 2015 - Apr 2015

5th and 6th grade



- Taught 6th grade English and Science, and 5th grade Maths and Environmental Sciences.
- Participated in and conducted rigorous teacher-training programs.
- Raised approximately 82,000 INR to set up a digital classroom, class library and fund a sports training program.

SKILLS

Programming and Scripting: Python, R, Praat scripting, Command Line Interface

C=PROCEEDINGS, P=POSTER, W=PUBLICATION IN PROGRESS,

• Web Technologies: D2L, Google Docs, Panopto

• Data and Code Management Systems: Pandas, Bee Keeper, Excel, git

• NLP, Data Science & Machine Learning: Pytorch, ScikitLearn, PyKaldi, SpaCy, NLTK, Matplotlib, Pandas, Numpy, Notebooks, WhisperAI, SpeechBrain, Ollama, Jupyter

• NLP and Phonetics: SpaCy, NLTK, Beautiful Soup, perl, Ollama, WhisperAI, SpeechBrain, Praat, Parseltongue, Kaldi, OpenSMILE, ffmpeg

• Mathematical & Statistical Tools: numpy, scipy, ggplot, lme4, dplyr, gss

• Other Tools & Technologies: imagemagik, bash, grep, ssh

• Documentation and editing: L^AT_EX, MS Word, RMarkdown, knitr, MKdocs, github pages

FELLOWSHIPS AND ACADEMIC EXPERIENCE

• Data Science Fellowship

Jan - Apr 2023

Data Science Institute, University of Arizona



- Brief description of the award and its significance.
- Impact or recognition associated with the award.

• Artistic Expression of Original Research

Oct 2024

Institute for Resilience



- Brief description of the award and its significance.
- Impact or recognition associated with the award.

• Competition Achievement

Month Year

Competition Name, Organizing Body



- Specific achievement or rank in the competition
- Skills or abilities demonstrated through this achievement

• Competition Achievement

Month Year

Competition Name, Organizing Body



- Specific achievement or rank in the competition
- Skills or abilities demonstrated through this achievement

LEADERSHIP EXPERIENCE

• Coordinator, Arizona Linguistics Circle Conference

May 2022 - Oct 2021

University of Arizona



- Build the Easychair abstracts submission portal.
- Recruited reviewers and coordinated the double-blind peer review.
- Managed all communications with authors.
- Created documentation for all procedures.

• Coordinator, Arizona Linguistics Circle Conference

May 2021 - Oct 2021

University of Arizona



- Managed social media accounts across multiple platforms.
- Created PR materials for disseminating information on the conference.
- Created profiles for authors and their submissions.

- **Office bearer, Arizona Linguistics Circle**

University of Arizona

Jan 2021 - Present



- Worked as a student representative in faculty meetings.
- Managed equipment and amenities in the student spaces.
- Mentored incoming graduate students.
- Volunteered in prospective student weekends and presentations and university showcases.

SERVICE

- **Reviewer, Coyote papers**

University of Arizona

Oct 2021



- **Reviewer**

Peer J Computer Science

Mar 2023

