

# Meghavarshini Krishnaswamy

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## Resume

### Education

- PhD **Linguistics**, *University of Arizona*, Tucson Arizona, USA, 2019–Present
- MS **Human Language Technology**, *University of Arizona*, Tucson, Arizona, USA, 2019–2021
- MA **Linguistics**, *The English and Foreign Languages University*, Hyderabad, India, 2013–2015
- BA (Hons.) **Lady Shri Ram College, University of Delhi**, New Delhi, India, 2010–2013

### Academic Research Experience

- GRA **Data Science Institute (educator and consultancy)**, *University of Arizona*, Fall 2023–Present
- Designed and delivered technical workshops encompassing python programming, command line interface proficiency, version control, High Performance Computing (HPC), and AI tools for research.
  - Spearheaded a collaboration with teaching faculty focused on enhancing pedagogical tools for Computational Linguistics and Natural Language Processing (NLP)
  - Provided consulting services for university research projects (data science), for the successful execution and optimization of these projects.
- GRA **DARPA ASIST-ToMCAT Project (NLP)**, *Summer 2020-Fall 2022*
- Designed and enhanced existing deep RNN models for detecting speech synchrony/entrainment.
  - Contributed towards code development, research insights, and qualitative assessments for vocalic feature extraction within a comprehensive speech analysis pipeline.
  - Oversaw the management of data collection and annotation tasks related to human subject data, while ensuring the quality and accuracy of collected data.
  - Provided documentation and writing for effective communication of our research findings across different platforms and audiences; such as research presentations, conference posters, publications, and meetings with DARPA Principal Investigators (PIs).
- GRA **Douglass Phonetics Lab (applied linguistics)**, *University of Arizona*, Spring 2020–Fall 2020
- Managed the lab's ongoing phonetics experiments and data collection.
  - Migrated the lab's experiments to remote platforms during the pandemic, and performed quality checks on the collected data.
  - Provided training and support to undergraduate students.
  - Contributed documentation for the data exploration and statistical analysis conducted.
- RA **SPLANG Phonetics Lab (phonetics and psycholinguistics)**, *The English and Foreign Languages University, Hyderabad*
- Designed and conducted acoustic phonetics studies for languages such as Bengali, Mongolian, Malayalam and Hindi.
  - Co-authored and edited papers, conference posters, research proposals and presentations.
  - Provided trainings 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 time and drafting the lab's budget and spending.

### Education and Teaching Experience

- Fellow **Teach for India**, *Hyderabad, India*, 2013-2015
- Worked as a full-time Grade 5 (Maths and Environmental Sciences) and Grade 6 (English and Science).
  - Conducted career orientations and soft-skills programs.
  - Underwent teacher-training for classroom management, curriculum development, pedagogy.

- Raised approximately 82,000 INR to set up a digital classroom, class library and to fund a sports training program (<https://www.ketto.org/fundraiser/mindswithoutfear>).

RA (intern) **Karadi Path Education Company, Chennai, India, Summer, 2014**

- Worked on session plans, teacher-aids and English manuals for a Hindi teaching module.
- Processed and tested the teaching materials with instructors.
- Edited teaching modules to make them accessible, engaging, and contemporary.

TA **Department of Linguistics, University of Arizona, (Instructor on Record)**

- **LING 314. Phonetics**, Spring 2023
- **LING/PSY 432. Psychology of Language (5-week online)** Summer 2022, 2023

## Professional Research Experience

Spring, 2023 **Fellow, Data Science Institute, University of Arizona Health Sciences**, Awarded this 14-week fellowship and training for data management planning, research reproducibility and accessibility, and effective software documentation.

Spring, 2022 **Coqui “Hack the Planet” Hackathon, Remote**, Trained and evaluated a Voice Command Detector for playing Chess in Tamil and Hindi languages using the Mozilla Common Voice dataset and Coqui STT system.

## Publications

Adarsh Pyarelal, Eric Duong, Caleb Jones Shibu, Paulo Soares, Savannah Boyd, Payal Khosla, Valeria Pfeifer, Diheng Zhang, Eric S Andrews, Rick Champlin, et al. The tomat dataset. In *Thirty-seventh Conference on Neural Information Processing Systems Datasets and Benchmarks Track*, 2023.

Meghavarshini Krishnaswamy and Natasha Warner. Perception of Malayalam three-way stop contrast among American English speakers. In *Proceedings of the 20th International Congress of Phonetic Sciences*, pages 401–405, 2023.

John Culnan, Seongjin Park, Meghavarshini Krishnaswamy, and Rebecca Sharp. Me, myself, and ire: Effects of automatic transcription quality on emotion, sarcasm, and personality detection. In *Proceedings of the Eleventh Workshop on Computational Approaches to Subjectivity, Sentiment and Social Media Analysis*, pages 250–256, 2021.

Meghavarshini Krishnaswamy, Indranil Dutta, and Maumita Bhaumik. Alveolar stops exhibit greater coarticulatory resistance than retroflexes and dentals in Malayalam. *The Journal of the Acoustical Society of America*, 148(4): 2582–2582, 2020.

Meghavarshini Krishnaswamy, Indranil Dutta, and Ushasi Banerjee. Active cavity expansion through lingual adjustments to place of constriction in voiced geminates. In *Proceedings of Meetings on Acoustics*, 2018, volume 33, page 060002, 2018.

## Skills

### Programming

Python Pytorch, ScikitLearn, PyKaldi, SpaCy, Matplotlib, Pandas, Numpy, Notebooks

R ggplot, lme4, dplyr, gss

CLI tools Imagemagik, Kaldi, ffmpeg, Bash scripting, grep, perl, ssh

### Technology

Acoustics Praat (and Praat scripting), Audacity, Kaldi and OpenSMILE

Editing MS Office, GSuits, Markdown and L<sup>A</sup>T<sub>E</sub>X

## Languages

- English (Indian), Proficient, Native
- Hindi, Proficient, Native
- Tamil, Proficient, Native
- Sanskrit, Basic, School diploma
- German, Basic