

# Meghavarshini Krishnaswamy

## Resume

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🔗 [meghavarshini](#)

in [meghavarshini-krishnaswamy](#)

## Education

PhD **Linguistics**, *University of Arizona*, Tucson Arizona, USA, 2019–2025

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 lead technical workshops on natural language processing (NLP) and speech recognition [🔗], python, command line interface, version control, and AI tools for research.
- Provided linguistic expertise and data processing pipelines for building and testing a quantum NLP language model for low-resource languages.
- Conducted technical consultations for data science research projects.

GRA **DARPA ASIST-ToMCAT Project (NLP)**, *Summer 2020-Fall 2022*

- Designed and enhanced existing unsupervised neural network models for detecting speech synchrony/entrainment [🔗] using pytorch, and scikit-learn.
- Created data collection pipelines and conducted qualitative assessments for speech data.
- Managed human subject data collection and annotation tasks.
- Provided documentation, subject surveys, and materials for DARPA Principal Investigators (PIs) Meetings, and project manuals.
- Contributed to conference publications at NAACL, NeurIPS, ICML (Pyarelal et al., 2025, Soares et al., 2024, Pyarelal et al., 2023).

GRA **Douglass Phonetics Lab (applied linguistics)**, *University of Arizona*, Spring 2020–Fall 2020

- Coordinated the lab's ongoing phonetics experiments, and speech and linguistic response data collection.
- Initiated the migration of the lab's experiments to remote platforms (like Finding Five) in 2020 and set up the experiment builders.
- Provided training, technical support and code to undergraduate students for data annotation, acoustic data analysis and automation.
- Contributed code, documentation and graphs for the data exploration and statistical analysis in R. Published (Krishnaswamy and Warner, 2023)

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.
- Interfaced with language consultants to create relevant and accurate stimuli for speech perceptions studies.
- 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.

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## Professional Research Experience

- Fall, 2024 **Artistic Expression of Original Research**, *In-person* , Joined a 3-day science communication and art retreat, and created and presented a mixed-media installation for my doctoral research.
- 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.

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## Publications

- Adarsh Pyarelal, John M Culnan, Ayesha Qamar, Meghavarshini Krishnaswamy, Yuwei Wang, Cheonkam Jeong, Chen Chen, Md Messal Monem Miah, Shahriar Hormozi, Jonathan Tong, and Ruihong Huang. MultiCAT: Multimodal communication annotations for teams. In Luis Chiruzzo, Alan Ritter, and Lu Wang, editors, *Findings of the Association for Computational Linguistics: NAACL*, pages 1077–1111, Albuquerque, New Mexico, 2025. Association for Computational Linguistics. ISBN 979-8-89176-195-7. doi: 10.18653/v1/2025.findings-naacl.61. URL <https://aclanthology.org/2025.findings-naacl.61/>.
- Paulo Soares, Adarsh Pyarelal, Meghavarshini Krishnaswamy, Emily Butler, and Kobus Barnard. Probabilistic modeling of interpersonal coordination processes. In *Forty-first International Conference on Machine Learning*, 2024. URL <https://proceedings.mlr.press/v235/soares24a.html>.
- 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 ToMCAT dataset. In *Thirty-seventh Conference on Neural Information Processing Systems Datasets and Benchmarks Track*, 2023. URL [https://papers.nips.cc/paper\\_files/paper/2023/file/803d8d4b4a549d0d062fc704f8659ce3-Paper-Datasets\\_and\\_Benchmarks.pdf](https://papers.nips.cc/paper_files/paper/2023/file/803d8d4b4a549d0d062fc704f8659ce3-Paper-Datasets_and_Benchmarks.pdf).
- 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. URL [https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS2023/full\\_papers/682.pdf](https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS2023/full_papers/682.pdf).
- Seema GP, Meghavarshini Krishnaswamy, Ramesh Mishra, and Indranil Dutta. Mismatched coarticulatory information hinders lexical access of coronal stops in Malayalam. In *Proceedings of the 20th International Congress of Phonetic Sciences*, pages 371–375, 2023. URL [https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS2023/full\\_papers/657.pdf](https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS2023/full_papers/657.pdf).
- 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. URL <https://aclanthology.org/2021.wassa-1.26.pdf>.
- 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*, volume 33, page 060002. Acoustical Society of America, 2018. URL <https://asa.scitation.org/doi/pdf/10.1121/2.0001024>.

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## Skills

### Programming

- Python    pytorch, scikit-learn, matplotlib, pandas, numpy, jupyter, pyKaldi, spaCy, re
- R        ggplot2, lme4, dplyr, gss, grepl
- CLI tools    imagemagik, kaldi, ffmpeg, bash, grep, perl, ssh

### Technology

- Acoustics    Praat (and Praat scripting), Kaldi, OpenSMILE, Audacity, whisperAI, pyaudio
- Editing      MS Office, GSuits, Markdown, knitr, and  $\text{\LaTeX}$

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## Languages

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| ○ English (Indian), Proficient, Native | ○ Hindi, Proficient, Native       |
| ○ Tamil, Proficient, Native            | ○ Sanskrit, Basic, School diploma |

○ German, Basic