Akhilesh Kakolu Ramarao

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RESEARCH AREAS

Computational Linguistics, Computational Morphology, Language Revitalization

EMPLOYMENT

2021–   **Heinrich-Heine-Universität Düsseldorf**
Wissenschaftlicher Mitarbeiter, Department of English Language and Linguistics

- Teaching Computational Linguistics courses for Bachelor and Masters of Arts students
- Setup phonetics laboratory
- Maintainer of Slamlab server, hosting multiple services

2019–20   **Civicdatalab**
Natural Language Processing (NLP) Researcher

- Worked on building Language Platform for Assamese language that includes - Optical Character Recognition for Assamese, Machine Translation system for English and Assamese, Assamese keyboard, and creation of parallel corpora for English and Assamese

2017–19   **Skit.ai**
Software Engineer

- Involved in designing and developing end-to-end speech and natural language processing A.I. systems for automating customer care systems

2017   **Ramco Systems**
Software Engineer

- Prime developer in designing and developing a chatbot for Human Resource (HR) system

EDUCATION

Ph.D (ongoing)   General Linguistics, Heinrich-Heine-Universität Düsseldorf, Germany
Advisors: Prof. Dr. Kevin Tang and Dr. Dinah Baer-Henney

M.A.	General Linguistics, Heinrich-Heine-Universität Düsseldorf, Germany, 2022-2024
	Grade: 1.1/5 (1 being the best)
	Thesis Title: Modeling irregular morphological patterns in Spanish verbs using transformers
	Advisors: Dr. Dinah Baer-Henney and Prof. Dr. Kevin Tang
B.Engg.	Automobile Engineering, Dayanand Sagar College of Engineering, India, 2012-2016
	Grade: 2.4/5 (1 being the best)

PUBLICATIONS

Conference Proceedings

submitted **Kakolu Ramarao. A**, Tang K. & Baer-Henney D. Evaluating the cognitive reality of Spanish irregular morphomic patterns: Humans vs. Transformers. Preprint: https://doi.org/10.48550/arXiv.2507.21556

2025 **Kakolu Ramarao. A**, Tang K. & Baer-Henney D. Frequency matters: Modeling irregular morphological patterns in Spanish with Transformers. In *Findings of the Association for Computational Linguistics: ACL 2025, pages 4474–4489*, Vienna, Austria. Association for Computational Linguistics. https://doi.org/10.18653/v1/2025.findings-acl.230

accepted Merchant R., **Kakolu Ramarao A.** & Tang K. Connecting the Persian-speaking world through transliteration. *3rd North American Conference on Iranian Linguistics.* Preprint: https://arxiv.org/pdf/2502.20047

2024 **Kakolu Ramarao, A.**, Petersen, W., Stein, A., Stein, E., & Xia, H. (2024). KlarTextCoders at StaGE: Automatic Statement Annotations for German Easy Language. In *Proceedings of GermEval 2024 Shared Task on Statement Segmentation in German Easy Language (StaGE)* (pp. 15–27), Vienna, Austria. Association for Computational Lingustics.

2023 Jeong, C., Schmitz, D., **Kakolu Ramarao, A.**, Stein, A., & Tang, K. (2023). Linear discriminative learning: a competitive non-neural baseline for morphological inflection. In *Proceedings of the 20th SIGMORPHON Workshop on Computational Research in Phonetics, Phonology, and Morphology* (pp. 138-150). Association for Computational Linguistics. https://doi.org/10.18653/v1/2023.sigmorphon-1.16

2022 **Kakolu Ramarao, A.**, Zinova, Y., Tang, K., & van de Vijver, R. (2022). HeiMorph at SIGMORPHON 2022 shared task on morphological acquisition trajectories. In *Proceedings of the 19th SIGMORPHON Workshop on Computational Research in Phonetics, Phonology, and Morphology* (pp. 236-239). Association for Computational Linguistics. https://doi.org/10.18653/v1/2022.sigmorphon-1.24

Journal Articles

2024 Muschalik, J., Schmitz, D., **Kakolu Ramarao, A.** *et al.* Typing /s/—morphology between the keys? *Reading and Writing* (2024). https://doi.org/10.1007/s11145-024-10586-9

TALKS

Peer-reviewed Talks

2024 "Community-driven Language Revitalization: Translating Children's Literature in K'man Mishmi" at the International Conference on Language, Ecology and Culture 2024, NEILAC, Guwahati, India. Co-authors: Sakelu Chikro and Dr. Pamir Gogoi. Slides

2024   "KlarTextCoders at StaGE: Automatic Statement Annotations for German Easy Language" at the Konferenz zur Verarbeitung natürlicher Sprache (KONVENS) 2024, University of Vienna, Austria. Co-authors: Wiebke Petersen, Anna Sophia Stein, Emma Stein, and Hanxin Xia.

2024   "A computational approach to understanding the cognitive reality of morphomic patterns: the case of L-shaped morphomes in Spanish" at the Annual Meeting of Linguistics Association of Great Britain and Northern Ireland 2024, Newcastle University, United Kingdom. Co-authors: Kevin Tang and Dinah Baer-Henney. Slides.

2024   "Acoustic Analysis of Vowels in Idu Mishmi" at the 27th Himalayan Languages Symposium, IIT Guwahati, India. Co-author: Pamir Gogoi.

2023   "From Zero to Terminal Hero" at the 32nd Tagung der Computerlinguistik-Studierenden (TaCoS), Heinrich Heine University, Düsseldorf, Germany. Slides

2023   "Can Neural Networks learn human-like behavior when inflecting verbs? The case of Spanish" at the Five-Minute Linguist competition, Linguistic Society of America 97th Annual Meeting, Denver, Colorado, United States of America.

2023   "Modeling irregular morphological patterns using Transformers" at the HeiCAD Lightning Talks, Heinrich Heine University, Düsseldorf, Germany.

Invited Talks

2025   "AI in Our Lives: The Ethics of AI Assistants" at the Tag der Forschung 2025, Heinrich Heine University, Düsseldorf, Germany. Slides

2021   "Language Revitalization: A case of Idu Mishmi" at Microsoft Research India, 2021.

2021   "Language Revitalization" at Navana Tech, 2021.

POSTER PRESENTATIONS

Peer-reviewed Presentations

2024   **Kakolu Ramarao, A.**, & Stein, A. S. AnglistikVoices: an L2 English speech dataset for educational and technological advancement in speech technology. LabPhon 19, Hangyang University, Seoul, South Korea. Poster

2023   Muschalik, J., Schmitz, D., **Kakolu Ramarao, A.**, & Baer-Henney, D. Acoustic duration and typing timing - same, same… but different? Phonetics and Phonology in Europe 2023, Nijmegen, Netherlands.

2023   Tang, K., **Kakolu Ramarao, A.**, & Baer-Henney, D. Modeling irregular morphological patterns with recurrent neural network: the case of the L-shaped morphome. In 13th Mediterranean Morphology Meeting, University of the Aegean, Greece.

Non-peer-reviewed Presentations

2024   **Kakolu Ramarao. A**, Tang K. & Baer-Henney D. Frequency matters: Modeling irregular morphological patterns in Spanish with Transformers. In 63rd Association for Computational Linguistics, Vienna, Austria. Poster

TEACHING

Heinrich-Heine-Universität Düsseldorf

Summer 2025	Academic Writing
Summer 2025	Applied Phonology: Evaluating Voice Assistants (co-teaching: Erdin Mujezinović)
Winter 2024	LLMs in Linguistic Research
Summer 2024	Learning Inflection
Winter 2023	Accent unplugged: Evaluating Voice assistants
Summer 2023	Synthesizing speech
Winter 2022	Language technology for Linguists with Internet of Things (IoT)
Winter 2022	LaTeX for Linguists
Summer 2022	Towards a career in language technology: linguistic annotation
Winter 2021	Basic Skills in Digital Humanities

SKILLS

Recent programming experience: Python, Bash, LaTeX, Scheme, Julia

Past programming experience: Haskell, Dart, JavaScript (AngularJS)

Frameworks: PyTorch, Flutter, Django

Databases: MySQL, PostgreSQL

Platforms: Arch linux, Ubuntu, MacOS

Cloud: AWS, GCP, High-performance computing (HPC)

Other technologies: Git, Docker, Neovim, Hugo, Jekyll, CI/CD

GRANTS AND AWARDS

2022	Hardware Grant. 20 × NVIDIA® JetsonTM Nano Developer Kits. NVIDIA Academic Hardware Grant, "FOSStering Digital Humanities through Accent Diversity & Conversational Devices". Co-applicant: Kevin Tang
2022	Education Grant. €9,424. e-Learning support fund, Heinrich-HeineUniversity Düsseldorf. "Interactive web-based review units for phonetics and phonology". Co-applicant: Christopher Geissler and Kevin Tang
2022	**First prize** at the HHU Legal Hackathon, Heinrich-Heine-Universität. Team: Akhilesh Kakolu Ramarao, Phaedon Paschalis and Diana Schill
2022	**First prize** at the HeiCAD Lightning Talks, Heinrich-Heine-Universität

FIELDWORK

2020	**Idu Mishmi community** Roing, Arunachal Pradesh, India

- Built the first ever E-Dictionary for Idu Mishmi and English in the form of an offline mobile dictionary application
- Press coverage: `https://arunachaltimes.in/index.php/2020/12/14/imcls-launches-mishmi-idu-dictionary-app/`

CONSULTING

2020-2021	XRI Institute
2020-2021	Vrook

VOLUNTEERING

2021-   **Idu Mishmi Cultural and Literary Society (IMCLS)**
Chief Coordinator

2021-   **Lohit Youth Library Network**
Volunteer

WORKSHOP ORGANIZATION

2024   Language learning workshop in K'man Mishmi, Bamboosa Library, Tezu, Arunachal Pradesh, India. Co-organizers: Sakelu Chikro and Dr. Pamir Gogoi

2023   Translation Workshop: English to K'man Mishmi, Bamboosa Library, Tezu, Arunachal Pradesh, India

2022   LibreSlam - Free and Open Source (FOSS) for everybody workshop at Heinrich-Heine-Universität Düsseldorf

DEMOS

2024   "Students as Researchers" at the Nacht der Wissenschaft, Shadowplatz, Düsseldorf, Germany

2022   "Role of linguistics in AI for social good" at the Nacht der Wissenschaft, Shadowplatz, Düsseldorf, Germany

LANGUAGES

English	*Fluent*
Kannada	*Fluent*
Hindi	*Advanced*
German	*Beginner (A1 level)*