

# Akhilesh Kakolu Ramarao

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## Experience

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### Employment

- **Heinrich-Heine-Universität Düsseldorf** **Germany**  
*Wissenschaftlicher Mitarbeiter, Department of English Language and Linguistics* *2021-Present*
  - Working on Computational Morphology. Supervised by Prof. Dr. Kevin Tang and mentored by Dr. Dinah Baer-Henney.
  - Teaching Computational Linguistics courses for Bachelor of Arts students.
  - IT administration for [SlamLab](#).
- **CivicDataLab** **Remote**  
*NLP Researcher* *2019 - 2020*
  - Played an integral role in developing and maintaining partnerships with various Non-Governmental Organizations and Governments.
  - Worked on building Language Platform for Assamese language that includes - Optical Character Recognition (for Assamese), Machine Translation system for English and Assamese, Assamese keyboard, Rich text editor and creation of Parallel Corpora for English and Assamese.
  - Case studies:
    - Analysing language complexity of Union Budget Speeches.
    - Topic modeling on Union Budget suggestions to understand citizens' input for the Union Budget 2020.
  - Built Crowd-sourced Translation platform to aid the process of disseminating credible COVID-19 related information in local languages.
  - Involved in building Text Annotation platform to perform Sequence Labeling. It was being used to annotate entities and relations in Indian Court judgements.
- **Vernacular.ai** **India**  
*NLP Engineer, Bengaluru* *2017 - 2019*
  - Early stage of the company presented me with an opportunity to build many technical components involved in both Voice Assistants and Multi-lingual Chatbots from the ground up.
  - Involved in designing and developing end-to-end speech and natural language processing A.I. systems for automating Customer Care Systems for Hotel industry.
  - Adopted various strategies to enrich customer experience such as: conversation design framework, dialog management system, predicting user responses and so on.
- **Ramco Systems** **India**  
*Software Engineer, Bengaluru/Chennai* *2017*
  - Prime developer in Designing and Developing a Chatbot for Human Resource (HR) system.
  - Responsible for all the Bug fixes, Documentation and feature implementation of the Machine

Learning components.

- Crafted users' conversations and implemented them using Finite State Machines.
- Mentions: Top 20 apps on Microsoft teams.

## Language Revitalization

### Idu Mishmi Cultural and Literary Society (IMCLS)

India

Chief Coordinator, Arunachal Pradesh

2020

- o Played an instrumental role in initiating the Language Revitalization Movement by managing Partnerships and Technology as a Chief Coordinator of IMCLS, the apex body of Idu Mishmi Tribe in Arunachal Pradesh, India.
- o Built the first ever E-Dictionary for Idu Mishmi and English in the form of a Mobile Dictionary application.
- o Coverage:
  - Launch of the E-dictionary.
  - Promotion from the Chief Minister of Arunachal Pradesh.

## Consulting

### XRI Institute

Remote

o Consultant, United States of America

2021

- Developed tools that serve the development of Human Language Technology (HLT) for low-resource languages.

### Vrook

India

o Tech Consultant

2020 - 2021

- Involved in planning and implementing strategies for Online pedagogy.
- Developing technology plan and providing continuous support in building learner-centric online learning platform.

## Internships

### Sense Infinity Technologies

India

o Full Stack Developer Intern

2016

- Designed and Developed a Cross-Platform Food Delivery Application written with AngularJS (Ionic Framework and Cordova).
- Involved in building backend for a Restaurant Booking Application using PHP (Laravel).

### Maruti Suzuki

India

o Industry Trainee

2014

- Worked with Floor supervisors and Mechanics as an Industry trainee.

## Volunteering

### Lohit Youth Library Network

India

o Volunteer, Arunachal Pradesh

2020 - Present

Founded by Padmashree Sathyanarayanan Mundayoor, Lohit Youth Library Network is a unique youth initiative in Arunachal Pradesh in North-eastern Himalayan India, reaching out to readers across a span of 300 kms in the remote Lohit and Dibang Valley regions, offering free reading learning opportunities.

- Panchajanya Foundation**  
*Core Committee Member, Bengaluru*

**India**  
**2012-2020**
- Our work is aimed at enriching and enhancing the capabilities of individuals to achieve well-being and harmony with respect to 'Akshara' – Knowledge, 'Arogya' – Health and 'Adhyatma' – Spiritual and moral values.

## Freelancing

- Designed and Developed a search tool for Online (Business) Listings using Python and Elasticsearch in 2017.
- Reviewed code and designed a few technical components for a Stealth Startup in 2017.

## Education

### Academic Qualifications

- Dayanand Sagar College of Engineering**  
*Undergraduate, Bachelor of Automobile Engineering*

**Bengaluru, India**  
**2012 - 2016**

## Teaching

- Synthesizing speech** [\[Link\]](#) Summer, 2023
- Language technology for Linguists with Internet of Things (IoT)** [\[Link\]](#) Winter, 2022
- LaTeX for Linguists** [\[Link\]](#) Winter, 2022
- Towards a career in language technology: linguistic annotation** [\[Link\]](#) Summer, 2022
- Basic Skills in Digital Humanities** [\[Link\]](#) Winter, 2021

## Skills and Projects

### Technical Skills

- Recent experience:** Python, Bash,  $\text{\LaTeX}$ , Scheme
- Past experience:** Haskell, Dart, JavaScript (AngularJS), **Frameworks:** Keras, Tensorflow, Flutter
- Platforms:** Arch linux, Ubuntu

### Personal Projects

- My personal technical projects and open source contributions can be found [here](#).
- My non-technical project in Material Science was to **Analyse Corrosion and Wear behaviour of developed Fly-ash based Thermal Spray coating**.

### Proposals Submitted

- Dialect-sensitive Text-To-Speech (TTS) systems with prosody transfer for under-resourced Indian languages: the case of Assamese and Mizo.** The team comprised of Drs. Kevin Tang, Caroline Wiltshire, Ratree Wayland, Pamir Gogoi (ABD) of the UF Speech, Lexicon and Modeling Lab, and Akhilesh Kakolu Ramarao.

- **Building Nyishi E-Dictionary and Speech Datasets.** Team: Akhilesh Kakolu Ramarao and Rutwik Phatak.
- Several proposals with Civicdatalab to various Governments and NGOs.

## Grants/Awards

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- **First prize** at the **HHU Legal Hackathon 2022.** Team: Akhilesh Kakolu Ramarao, Phaeton Paschalis and Diana Schill.
- **First prize** at the **HeiCAD Lightning Talks 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
- 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

## Publications

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- Chongnam Jeong, Dominic Schmitz, **Akhilesh Kakolu Ramarao**, Anna Stein, and Kevin Tang. 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*, pages 138–150, Toronto, Canada. Association for Computational Linguistics. <https://aclanthology.org/2023.sigmorphon-1.16.pdf>
- **Akhilesh Kakolu Ramarao**, Yulia Zinova, Kevin Tang & Ruben van de Vijver. 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*, 236–239. Seattle, Washington: Association for Computational Linguistics. <https://aclanthology.org/2022.sigmorphon-1.24>

## Presentations

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### Talks.....

- **Akhilesh Kakolu Ramarao**, Kevin Tang & Dinah Baer-Henney. January, 2023. Can Neural Networks learn human-like behavior when inflecting verbs? the case of Spanish. Shortlisted presentation at the Five-Minute linguist competition, *Linguistic Society of America 97th Annual Meeting 2023*, Denver, CO, USA.
- **'Modeling irregular morphological patterns using Transformers'** at HeiCAD Lightning Talks 2022.
- **'Language Revitalization: A case for Idu Mishmi'** at Microsoft Research India, 2021.
- **'Language Revitalization: A case for Idu Mishmi'** at Navana Tech, 2021.

### Poster presentations.....

- (June 2023) Muschalik, J., Schmitz, D., **Kakolu Ramarao, A.** & D. Baer-Henney. Acoustic duration and typing timing – same, same... but different? Presentation at Phonetics and Phonology in Europe 2023, Nijmegen, Netherlands.
- Kevin Tang, Akhilesh Kakolu Ramarao & Dinah Baer-Henney. May, 2022. Modeling irregular

morphological patterns with recurrent neural network: the case of the L-shaped morpheme. *13th Mediterranean Morphology Meeting*, University of the Aegean, Greece.

- Akhilesh Kakolu Ramarao. 2020. Analysis of POCSO cases in Uttar Pradesh. Agami.

## Conference/Workshop Organiser

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- Chief organizer of LibreSlam - Free and Open Source (FOSS) for everybody (<https://slam.phil.hhu.de/libreslam/>) at Heinrich-Heine-University, Germany, 2022.
- Chief organiser and a teaching member of the LY-CS101 Course. The course was primarily aimed at the beginner level Computer Science students in collaboration with National College, Bangalore, India and Merge Intern, 2020.

References available upon request.