Akhilesh Kakolu Ramarao

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Experience

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*

- 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.
- Built the first ever E-Dictionary for Idu Mishmi and English in the form of a Mobile Dictonary application.
- Coverage:
  - Launch of the E-dictionary.
  - Promotion from the Chief Minister of Arunachal Pradesh.

Consulting

XRI Institute   **Remote**
Consultant, United States of America   *2021*

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

Vrook   **India**
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**
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**
Industry Trainee   *2014*

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

Volunteering

Lohit Youth Library Network   **India**
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 — **India**
Core Committee Member, Bengaluru — *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 — **Bengaluru, India**
Undergraduate, Bachelor of Automobile Engineering — *2012 - 2016*

Teaching

- **Accent unplugged: Evaluating Voice assistants** [Link] — Winter, 2023
- **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, 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.**

Grants/Awards

- **First prize** at the **HHU Legal Hackathon 2022**. Team: Akhilesh Kakolu Ramarao, Phaedon 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

- 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

Talks

- **'From Zero to Terminal Hero'** at 32nd TaCoS conference, 2023.
- **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 morphome. *13th Mediterranean Morphology Meeting*, University of the Aegean, Greece.
- **Akhilesh Kakolu Ramarao. 2020**. Analysis of POCSO cases in Uttar Pradesh. Agami.

Conference/Workshop Organiser

- 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.