

Roshni Poddar

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Experience

Jan 2022 Present	Microsoft Research <i>Research Fellow & Research Intern Advisors: Dr. Manohar Swaminathan, Dr. Mohit Jain, Dr. Pratyush Kumar</i> <ol style="list-style-type: none">Engineered a video-based Android quiz app featuring single and multiplayer play and sign language quiz creation, co-designed with the Deaf community to facilitate learning of Indian Sign Language and English. > Led a mixed-method research study with 20 Deaf participants to assess usability, analyze gameplay behavior, and explore the learning aspects of the app. Pilot study presented as a poster at ASSETS'23; full study published in the ITU'23 journal.Developed an Android application and a Node.js server to support educational group calls between visually impaired students and teachers, facilitating communication and the delivery of accessible content. > Implemented an Interactive Voice Response system using FastAPI, enabling children to independently interact with a variety of accessible educational content, including stories, quizzes, and audio games. > Constructed a React.js-based website for educators to effectively manage educational content and track student engagement metrics. This platform is implemented in blind schools across three Indian states and is expanding nationwide. > Led a two-month remote study with 29 visually impaired children to evaluate the effectiveness of these educational tools and identify potential areas for refinement. Upcoming paper at COMPASS'24.Worked with a PhD student at University of Washington on building an accessible video conferencing prototype for mixed hearing groups. > Conducted in-person user studies and focus group discussions with 18 Deaf and Hard of Hearing participants, 6 interpreters, and 10 hearing individuals. Paper published at ASSETS'23.Currently co-conducting a qualitative study on how visually impaired teachers in India use technology and how Generative AI can enhance their teaching methods.
August 2020 Dec 2021	AI4Bharat <i>Research Intern Advisor: Dr. Pratyush Kumar</i> GitHub > Used MediaPipe to extract features from Indian sign language videos, trained and evaluated machine learning models (transformer, CNN+ LSTM model, and XGBoost). Achieved 88.44% accuracy on 4287 videos over 263 word signs. > Conducted a mixed-methods study involving 15 semi-structured interviews and 131 survey responses to understand the challenges faced by the employed Deaf community in India. Paper published at INTER-ACT'23.
April 2020 June 2020	Cloud Computing and Big Data Research Center, PES University <i>Research Intern</i> > Configured NextCloud software to help collaboration between administration, faculty and students while ensuring privacy.

Education

Aug 2018 May 2022	PES UNIVERSITY B.Tech, Computer Science & Engineering CGPA: 9.17 out of 10	Bangalore, India
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Honours and Awards

Accessibility Lunch Series at Carnegie Mellon University, 2024.	Presented a talk on <i>Empowering diverse learning for children with vision impairments</i>
Disability Innovation Summit: Inclusive Interactions by GDI Hub, 2023.	Presented a talk titled <i>Learning opportunities for blind students - numeracy, logical thinking and accessible artifacts</i>
Microsoft Hackathon, 2022.	Won third place in Hack 2 enable and Hack for Society categories among 10,019 entries
Prof. CNR Rao Scholarship.	Received merit scholarships for academic excellence during undergraduate studies.

Skills

Programming Languages	Kotlin (Android development), Python, C++, C, HTML5, CSS, JavaScript, TypeScript
Frameworks & Technologies	React, Next.js, FastAPI, PyTorch, TensorFlow, Flask, Express.js, Git
Cloud & Database Technologies	Azure Cloud Services, MongoDB, MySQL
Accessibility	Web accessibility (WCAG, ARIA), Android accessibility, VoiceOver, TalkBack, NVDA