

Venkatesh Potluri

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Education

Ph.D. in Computer Science (Advised by Prof Jennifer Mankoff and Prof Jon Froehlich)

Paul G. Allen School for Computer Science & Engineering

2018 to present

B.Tech HONS & MS by Research (Dual Degree) in Computer Science & Engineering

International Institute of Information Technology, Hyderabad

2010 to 2015

Senior Secondary School

P. Obul Reddy Public School, Hyderabad

2008 to 2010

Experience

• Research Fellow

July 2017 to July 2018

Microsoft Research, Bangalore - Advised by: [Dr. Manohar Swaminathan](#)

- **CloudATM**: Financial services are not very accessible to people with visual impairments in India. In this effort, we propose a new ATM software design to improve accessibility of ATM cash withdrawals for people with visual impairments.
- **Codescape**: The idea is to design and explore the use of a spatial audio UI to improve usability of GUI based programming environments for developers with visual impairments. Our goal is to measure the impact the use of multiple audio sources to convey information has on a developer.
- **Contributions to SeeingAI**: I have contributed to the SeeingAI project during their initial release through feature enhancement suggestions.

• Research Intern

January 2017 to May 2017

Microsoft Research, Bangalore

- **CodeTalk**: GUI based programming environments convey information to sighted developers through visual cues. This information is not conveyed to screen reader users. CodeTalk is a Visual Studio plug-in that introduces code glance-ability, navigability and alert-ability (access to real-time IDE information). In CodeTalk, we introduced our version of debugging through speech and non-speech audio. Download the plug-in at <https://github.com/microsoft/codetalk> .

• Consultant

April 2016 to December 2016

Microsoft India R&D Private Limited, Hyderabad - Reported to: Sudhakar Pasupuleti & Amrut Kale

- **Office Accessibility on Android**: Worked in the team responsible for accessibility of Office Apps on Android. My technical abilities and my expertise in the accessibility domain enabled me to contribute to various stages of shipping the accessibility experience; from prioritizing different features and designing the right experience with the program managers to implementing and shipping these experiences with the engineering team. The product's accessibility experience has received positive feedback from customers.
- **Prototype to Improve Navigability in Word Processors**: The idea was to try and simplify navigating through the complex UI of Microsoft Word. The approach was to use voice input to address this. I was responsible for proposing, ideating and implementing this prototype. The idea has received recognition and appreciation from Microsoft's leadership team.
- **Accessibility Tests for Office Apps on Android**: I was responsible for testing and identifying accessibility issues in Office apps on Android. In addition to identifying issues as per Microsoft's Accessibility Standard (MAS), I was also responsible for identifying usability issues in the accessibility experience of these apps.

Projects

- **Supporting UI and layout design for developers with visual impairments:** An effort to develop an alternative (non-visual) approach to UI and layout design.
- **CodeTalk:** A Visual Studio plug-in to Improve IDE accessibility to developers with visual impairments through improved code glanceability, navigability and real time access to IDE information.
- **CloudATM:** An ATM infrastructure design proposed to improve accessibility of ATM cash transaction to visually impaired people. The re-design can be built on top of UPI.
- **CodeScope:** A Spatial Audio UI design to improve developer productivity for visually impaired developers by introducing non-linearity in screen reader information access
- **[Audio Rendering of Mathematical Content](#):** This project explored the use of speech and non-speech cues to render mathematical content (equations and pie charts) in audio. Techniques were proposed that made use of pitch and rate variations, intonation, pauses in text to speech systems, and spatial sound to render equations in audio.
- **Unified Keyboard Layout for Screen Readers:** Every screen reader has its own style of keyboard shortcuts, making it difficult for visually impaired users to switch between different screen readers and platforms. The idea was to explore and propose guidelines for choosing keyboard shortcuts for screen readers and eventually come up with a universal keyboard shortcut mapping.

Publications

- **PocketATM: Understanding and Improving ATM Accessibility in India**
Singanamalla. S, Potluri. V, Scott. C, & Medhi-Thies. I (To appear in 2019). "PocketATM: Understanding and Improving ATM Accessibility in India" Information and Communication Technologies and Development Conference 2019
- **[Up to a Limit?: Privacy Concerns of Bystanders and Their Willingness to Share Additional Information with Visually Impaired Users of Assistive Technologies](#)**
Ahmed, T., Kapadia, A., Potluri, V., & Swaminathan, M. (2018). Up to a Limit?: Privacy Concerns of Bystanders and Their Willingness to Share Additional Information with Visually Impaired Users of Assistive Technologies. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 2(3), 89.
- **[CodeTalk: Improving Programming Environment Accessibility for Visually Impaired Developers](#)**
Potluri, V., Vaithilingam, P., Iyengar, S., Vidya, Y., Swaminathan, M., & Srinivasa, G. (2018, April). CodeTalk: Improving Programming Environment Accessibility for Visually Impaired Developers. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (p. 618). ACM.
- **[Significance of Paralinguistic Cues in the Synthesis of Mathematical Equations](#)**
Potluri.V, Rallabandi.S, Srivaastava.P and Prahallad.K. (2014). "Significance of Paralinguistic Cues in the synthesis of Mathematical Equations" International Conference on Natural Language Processing

Workshops

- **JAWS and Assistive Technology in Apple Products** *October 2013*
Co-organized with Frontline Eye Hospital, Chennai a one day workshop to spread awareness on the current assistive technology and the possible ways to adapt. I was one of the 2 resource persons for this workshop.
- **Computer Training in Assistive Technology** *June 2015*
In collaboration with Frontline Eye Hospital, Chennai organized a 10-day workshop. Here, I introduced parents and individuals with disabilities to JAWS and helped them learn to perform basic tasks (word document creation, email, recreation on the internet and using cloud storage services). I was involved in designing the content, practice exercises and conducting classes for the workshops.

Invited Talks and Presentations

- **Significance of Cues in Synthesis of Mathematical Content** *University of Hyderabad*
At the Annual Cognitive Science Conference by ACCS India *October, 2017*
- **Visionary Fighter** *Hyderabad*
TEDxYouth@Hyderabad - <https://goo.gl/kY1WN9> *November 2016*
- **Significance of Cues in the Synthesis of Mathematical Content** *San Diego*
At the International Technology and Persons with Disabilities Conference *March 2015*
We replicated speech patterns followed by human beings with the help of cues (speech and non-speech) to render math (equations and pie charts) in audio.
- **Technology for the Visually Impaired** *Hyderabad*
At the Engineering the Eye Workshop by MIT Media Lab and LV Prasad Eye Hospital *July 2013*
Presented a talk on the current state of assistive technology for the visually impaired, the challenges and the possibilities to the workshop participants at the workshop organized by the Camera Culture Group, MIT Media Lab and LV Prasad Eye Institute.

Awards and Scholarships

- **Microsoft Endowed Fellowship in Computer Science Engineering**, University of Washington – September 2018 to June 2019
- **Honorable Mention for CodeTalk at CHI'18**
- **Microsoft Research Student Travel Grant**: Microsoft – January 2016

Skills

- **Skills**: C, C++, Python, C#
- **Scripting Languages**: Bash
- **Assistive Technology**: JAWS, Mobile Speak, TalkBack, VoiceOver (Os X and iOS), NVDA and Orca.

References

Available upon request.