

AKASHDEEP BANSAL

Research Scholar (PhD)

AssisTech Lab, School of Information Technology

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EDUCATION

- **Doctor of Philosophy (PhD)** (July 2016 - Present)
Topic: Comprehensive Accessibility of Equations for Visually Impaired
School of Information Technology, Indian Institute of Technology Delhi, Hauz Khas, New Delhi, India 110016
Supervisor: Prof. M. Balakrishnan
Coursework: Digital Image Processing, Machine Learning, Special Module on Intelligent Information Processing, Human and Machine Speech Communication.
- **Master of Technology** (July 2014 - July 2016)
Optoelectronics and Optical Communication
Department of Electrical Engineering, Indian Institute of Technology Delhi, Hauz Khas, New Delhi, India 110016
Thesis: Study of electromagnetic wave scattering from rough icy surfaces.
Thesis Advisor: Dr. Uday Khankhoje
CGPA: 8.6/10
- **Bachelor of Technology** (August 2010 - June 2014)
Department of Electronics and Communication Engineering, Uttar Pradesh Technical University, Lucknow, UP, India
Aggregate Percentage: 73.36

RESEARCH INTERESTS

Assistive Technologies, Human-Computer Interaction, Document Analysis, and Image Processing

PUBLICATIONS

Akshansh Chahal, Manshul Belani, **Akashdeep Bansal**, Neha Jadhav, and M. Balakrishnan, "Template based Approach for Augmenting Image Descriptions," in *Proc. 16th International Conference on Computers Helping People with Special Needs*, 2018 (to appear)

PROJECTS

Reading Accessibility for Visually Impaired (RAVI) (June 2016 - Present)

In this project, we are focusing on making eBooks accessible for persons with visual impairment on Android platform. The project is funded by MHRD, Govt. of India. The key objectives of the project are-

1. Navigating and accessing complex equations that is embedded in the text in a comprehensible manner
2. Exploring automatic/semi-automatic generation of text that needs to be augmented for describing a diagram to the visually impaired
3. Issues related to access of Indian language material using screen readers.

As most of the eBooks available are in PDF format, we planned to accomplish above mentioned objectives by converting PDF file to the ePub. Currently, we are working on some projects related to PDF to ePub conversion, Alt-Text generation for the Text-book images, and Font converter for Indian languages.

WORKSHOP AND PROFESSIONAL ACTIVITIES

- Mentored 25 students for M.Tech and B.Tech projects. (July 2016 - Present)
- Participated in OpenCircle at “Microsoft Accessibility Summit”, Microsoft India campus, Hyderabad. (May 30, 2017)
- Presented a talk on “Tools and Techniques for accessing STEM content and challenges in Reading Accessibility for Visually Impaired” at the invited seminar by PwD cell, Indian Institute of Technology Kanpur. (May 23, 2017)
- Presented a talk on “Accessing Mathematics with Screen Readers” at the National workshop on Tactile and Audio Graphics for the visually impaired, Indiana University gateway, Gurugram. (April 5-6, 2017)
- Participated in Hackathon for visually impaired, International Accessibility Summit during Shaastra, TechFest of IIT Madras. (Dec 31, 2016 – Jan 3, 2017)
- Participated in ICCHP Summer University, 15th International conference on computers helping people with special needs (ICCHP 2016), University of Linz (Austria). (July 8-12, 2016)
- Participated in 2nd Indo-US workshop on accessibility technologies for the blind and visually impaired, Indian Institute of Technology Delhi (India). (Feb 12-13, 2016)

EXTRA CURRICULAR ACTIVITIES

- Organized “Inclusive STEM Hackathon 2018” at IIIT Bangalore, Jan 19-21, 2018. (Jan 2018)
- Member of the I-Stem (Inclusive STEM), a group of visually impaired students and professionals working towards solving challenges in inclusive STEM education system for India. (March 2017 - Present)
- Coordinator of Accessibility@IITD community, a group of students work towards solving various accessibility to person with disability related challenges at the campus. (July 2016 - Present)
- President of S-Boosters Society, a technical society at undergrad college. (July 2012 – May 2014)
- Head coordinator of Engineer’s Day Celebration’ 12 – A District level Technical Fest. (Sep 2012)
- Guided the students as “House Captain” in school for 1 year. (July 2007 – May 2008)

REFERENCES

- **Prof. M. Balakrishnan** (mbala@cse.iitd.ac.in)
Department of Computer Science & Engineering,
Indian Institute of Technology Delhi, INDIA

- **Dr. Uday K Khankhoje** (uday@ee.iitm.ac.in)
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Indian Institute of Technology Madras, INDIA