

Prerna Mishra

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[Research Profile](#)

RESEARCH OBJECTIVE

Working on problems that cross the boundaries of multiple research fields and to build systems that can interpret the visual world without human supervision.

TEACHING OBJECTIVE

To foster the acquisition of a base of concepts and learning skills to facilitate further learning and thinking. Develop and promote creativity and high-order thinking skills that increase the performance of the students

RESEARCH INTEREST

Video and Image Mining; Image Summarization; Activity Recognition and Description; Assistive Interaction; Computer Vision; Human-Computer Interaction

EDUCATION

<i>Ph.D.</i> (Expected June 2022)	International Institute of Information Technology , Raipur, India Department of CSE Thesis Title: "Chart Interpretation and Summarization using Hybrid Intelligent Techniques" GPA: 8.9/10.0
<i>M. Tech</i> (June 2015)	R.T.M. Nagpur University , Maharashtra State University, India Department of CSE Thesis Title: "Assistive Voice-Over for Visually Impaired" GPA: 8.73/10.0
<i>B.E.</i> (June 2013)	R.T.M. Nagpur University , Maharashtra State University, India Department of CSE PERCENT: 65.7%
<i>HSC</i> (June 2009)	Maharashtra State Board , India PERCENT: 73.17%
<i>SSC</i> (June 2007)	Maharashtra State Board , India PERCENT: 82.15%

WORK EXPERIENCE

- 2018– **Research/Teacher Assistant**, Department of CSE, International Institute of Information Technology, Raipur, India.
- Duties include conducting lab sessions, mentoring undergraduate students, organizing subject-related course content for undergraduate and graduate populations, evaluating course performance, choosing appropriate texts and teaching aides, and holding regular office hours.
- 2015-17 **Assistant Professor**,
R.T.M. Nagpur University,
Department of CSE, JD College of Engineering, Nagpur, India.
- *Subject Taught*: DBMS, Gaming Theory and Practices
- *Lab Sessions Conducted*: DBMS, HTML, Python Basics
- 2012- - **Member and Trainer**,
Summer Schools,
Nagpur, India.
- Duties include conducting a few technical and non-technical sessions.

SELECTED PUBLICATIONS

Journal Articles

- 2022 **P. Mishra**, S. Kumar, MK. Chaube, “ChartVi: Charts Summarizer for Visually Impaired” *Elsevier Computer Languages*. doi:10.1016/j.col.2022.101107. .
- 2021 **P. Mishra**, S. Kumar, MK. Chaube, “Dissimilarity-Based Regularized Learning of Charts” *ACM Transactions on Multimedia Computing, Communications, and Applications*. doi:10.1145.3458884
- 2021 **P. Mishra**, S. Kumar, MK. Chaube, “Evaginating Scientific Charts: Recovering Direct and Derived Information Encodings from Chart Images” *Journal of Visualization*. doi:10.1007/s12650-021-00800-z
- 2017 **P. Mishra**, U. Shrawankar “ESPY: assistive aid to visually impaired for desktop access” *International Journal of the Digital Human*. doi:10.1504/IJDH.2018.096285

Co-Authored Book Chapters

- 2021 S. Kumar, **P. Mishra**, MK. Chaube, “Internet of animal health things (IoAT): A new frontier in animal biometrics and data analytics research” In: *Elsevier Intelligent Data-Centric Systems, IoT-Based Data Analytics for the Healthcare Industry*, Academic Press.

Conference Proceedings

- 2022 **P. Mishra**, S. Kumar, MK. Chaube, “Assistive Accessible Charts for Visually Impaired Students: An Automated Learning System.” 36th AAAI Conference on Artificial Intelligence Workshop of AI for Education. Vancouver, Canada. Washington.
- 2022 **P. Mishra**, U. Shrawankar “Human Vs. Machine Eye for Graph Visualization” 10th IEEE Region 10 Symposium. IIT Bombay, India.
- 2021 **P. Mishra**, S. Kumar, MK. Chaube, “Interpretation of Combined and Complex Charts for Potent Summaries.” Doctoral Consortium, Proceedings of IEEE International Conference on Automatic Face and Gesture Recognition. Jodhpur, India.
- 2014 **P. Mishra**, U Shrawankar, “Desktop Operations Procreate Ease for Visually Impaired.” Proceedings of the 14th IEEE International Symposium on Signal Processing and Information Technology. India.

Reviews

- 2021 **P. Mishra**, S. Kumar, MK. Chaube, “Graph Interpretation, Summarization and Visualization Techniques: A Review and Open Research Issues” *Multimedia Tools and Applications*. doi:10.1007/s11042-021-11582-9

Submitted Patents

- 2022 **P. Mishra**, U Shrawankar, *Assistive Technique of Mouse Controlled Desktop Navigation for Visually Impaired*. Awaiting Decision.
- 2022 **P. Mishra**, *Design and Development of Educational Assistive System for Persons with Visual Disability*. In Review.

Manuscripts under Review and Prepreparation

- 2022 **P. Mishra**, “ChartVI- A Style Invariant Intended Summarization for Charts”, *IEEE Transactions of Multimedia*. Under review.
- 2022 **P. Mishra**, “Adaptive Document Learning for Cross-Domain Object Detection”, *Information Retrieval Journal*. Revision Submitted.
- 2022 “Multi-Domain Semantic Image Synthesis for Image Beautification”. Ready for Submission.

Prepared Datasets

- 2022 **P. Mishra**, “Hand-drawn iK Chart Sketches” having 1000 images.
- 2020 **P. Mishra**, “MixedBag” - A Heterogeneous synthetic document image datasets having 100,000 document images.

SCHOLARLY PARTICIPATIONS/DEVELOPMENTS

- 2021 **Member Organizing Committee:** “International Conference on Technology, Research, and Innovation for Betterment of Society”. IIIT, Raipur, India. December.
- Duties include hosting conference sessions and expert talks, preparation of presentation templates and evaluation parameters
- 2018- **Member:** “Society for Data Science (S4DS)”
- Attending lectures, presentations, and career events focused on image processing and graphic visualization.
- 2014 **Member Organizing Committee and Participant:** “National Conference on Innovative Trends in Computer Science.” Department of CSE, G. H Rasoni College. Nagpur, India. December.
- Duties include organized schedules, attended dignitaries, preparation and formatting of evaluation parameters, scheduling seminars.

Professional Memberships

- 2022- - IEEE Women in Engineering
- 2019- - IEEE Student Member
- 2017- - Indian Society for Technical Education

PROJECT MENTOR

Postgraduate

- 2019 *Segmenting person and his reflection using deep learning model*
- An ensemble model integrates two convolutional neural network models for segmenting person and his reflection in indoor environment.

Undergraduate

- 2020 *Weather recognition from captured images using residual net.*
- Dual residual net which recognizes weather from day and night images.
- 2019 *Wall Crack Detection Using Transfer Learning Models.*
- Analysis of various CNN models for detecting wall cracks.

SKILLS

- Strong independent work style and good teamwork skills
- Willing to perform basic tasks and move on to solve complex problems
- Language Skills: English and Hindi

REFERENCES

Dr. Sanjay Singh
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Varanasi, UP, India
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Dr. Urmila Shrawankar
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I hereby certify that the information furnished above is true to the best of my knowledge and belief.