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# Sandipa Roy

## PROFILE:

I am Sandipa Roy, a researcher pursuing my PhD in Computer Science and Technology.

## EDUCATION:

M.Tech in Computer Science & Technology [2009–2011]

B.Tech in Computer Science & Technology (Lateral Entry)  
Siliguri Institute of Technology, (2006 – 2009)

## TECHNICAL SKILLS:

Programming: C, C++, Python, MATLAB, Android

Tools & Software: CONN, FSL, SPM, MRICROGL

## WORK EXPERIENCE:

principal Investigator:

Indian Statistical Institute (ISI), Kolkata |  
December 1, 2017 – Present

- Leading research initiatives focused on assistive technology for the hearing impaired.
- Conducting advanced data analysis on fMRI datasets using tools like CONN, FSL, and SPM.
- Research on language comprehension, arithmetic reasoning, and development of mobile applications to aid communication for the Deaf.

Assistant Professor:

September 2011 – June 2015

- Taught undergraduate and postgraduate courses in computer science and technology.
- Supervised students' research projects and contributed to curriculum development.
- Conducted research in programming languages and assistive technology.

## ACHIEVEMENTS:

1. Principal Investigator under DST Women Scientist Scheme–B, File No.: SR/WOS–B/140/2016.
  - Project Title: "Development of Computer Vision–Based 3D Indian Sign Language Recognition to Assist Differently Abled."
  - Duration: December 2017 – May 2021.
  - Sanctioned Amount: ₹18,78,500/-.
  - Funding Agency: Department of Science and Technology, Government of India.

2. Received award at the Indian International Science Festival 2019 (in Assistive Technology for Poster Presentation).

3. Principal Investigator under DST Women Scientist Scheme–B, File No.: DST/WOS–B/EIT–5/2021/Sandipa(G).

- Project Title: "Towards Development of Assistive Technology for Indian Sign Language: Cognitive Analysis and Application Development."
- Duration: November 2021 – Present.
- Sanctioned Amount: ₹ 29,31,768/-.
- Funding Agency: Department of Science and Technology, Government of India.

## PUBLICATIONS:

- Roy, Sandipa, et al. "A New Assistive Technology in Android Platform to Aid Vocabulary Knowledge Acquisition in Indian Sign Language for Better Reading Comprehension in L2 and Mathematical Ability." 2019 6th International Conference on Signal Processing and Integrated Networks (SPIN), IEEE, 2019.
- Roy, Sandipa, et al. "An App–Based Unified Approach to Enhance Language Comprehension and Mathematical Reasoning Ability of the Hearing Impaired Using Contrast Words." TENCON 2019–2019 IEEE Region 10 Conference (TENCON), IEEE, 2019.
- Roy, Sandipa, et al. "Indian Sign Language Digital Library on Medical Science: Role of Assistive Technology for Hearing Impaired." (In press).

Journal Articles:

- Roy, Sandipa, et al. "Legal Assistance for Deaf: Role of Indian Sign Language Digital Library." (Accepted, in press), Legal Reference Services Quarterly 43.3 (2024): 204–215. (Scopus Index).
- Roy, Sandipa, et al. "Digital Pedagogy in Indian Sign Language: Requirement Analysis and Assistive Technology–Based Application." Universal Access in the Information Society. (Submission under peer review).

Chapter Contributions:

- Roy, Sandipa, et al. "Difficulty with Language Comprehension and Arithmetic Word Problems Due to Hearing Impairment: Analysis and a Possible Remedy Through a New Android–Based Assistive Technology." In Data Analytics in Biomedical Engineering and Healthcare, Academic Press, 2021, pp. 29–56.