

Curriculum Vitae

About

Name Mrinmoy Bhattacharjee
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Education

Degree/Certificate	Institute/Board	CPI/%	Year
Ph.D., <i>Signal Processing</i>	IIT Guwahati, Assam	8.00 CPI	2016-present, <i>thesis submitted</i>
M.Tech., <i>Computer Technology</i>	NIT Raipur, Chattisgarh	8.44 CPI	2012-2014
B.Tech., <i>Information Technology</i>	Assam University Silchar	79.55%	2007-2011
Higher Secondary, 10 + 2	Assam Board	77.40%	2007
Secondary, 10	CBSE	93.40%	2005

Skills

- **Scripting:** C/C++, Python, Java, SQL, HTML/CSS, JavaScript/Ajax, JSP/PHP, Latex, Bash
- **Machine Learning:** Keras/Tensorflow, PyTorch, libSVM, HTK
- **Tools:** Matlab/Octave, Spyder/Jupyter, MySQL, Netbeans/Eclipse, MS-Paint/ GIMP, MS-Excel/ LibreOffice-Calc
- **Operating Systems:** Ubuntu, Windows

Experience

- **Senior Project Engineer, IIT Dharwad** **Apr 2022-present**
“Development of scalable Speaker Recognition systems for Indian languages”, *sponsored by MeitY, Govt. of India*
- **Assistant Project Engineer, IIT Guwahati** **Aug 2014-Dec 2015**
“Development of Online Assamese Handwriting Recognition System”, *sponsored by DST, Govt. of India*

Projects

- **Scalable speaker recognition systems for Indian languages** **Senior Project Engineer**
 - Developing an open-source Python-based toolkit, project website, demo prototypes, and web-based portals for hands-on experience of building speaker recognition systems for Indian languages.
- **Analysis of Speech and Music Content for Movie Genre Classification** **Ph. D. thesis**
Supervisors: *Prof. S. R. Mahadeva Prasanna (Dept. of EE, IIT Dharwad), Dr. Prithwijit Guha (Dept. of EEE, IIT Guwahati)*
 - Proposed magnitude spectrum-based features for speech and music classification
 - Explored phase information for speech and music classification
 - Proposed harmonic-percussive source separation features with multi-task learning framework based classifiers for speech overlapped with music detection
 - Proposed a movie-trailer genre classification system using speech and music information as features
- **RnDOPS: ERP solution for the R&D Section, IIT Guwahati** **Assistant Project Engineer**
 - Worked as lead programmer for developing a complete automation solution (RnDOPS) for the Research and Development Section, IIT Guwahati.
 - Used JSP/Java in the backend and HTML/CSS/Javascript/Ajax in the frontend.
 - The RndOPS system is still fully operational at IIT Guwahati.
- **Online handwriting recognition for Assamese language** **Assistant Project Engineer**
 - Developed features and classification systems for online handwriting recognition.
 - Used GMM, SVM, and HMM for the recognition systems. Used Matlab and C to develop the systems.
- **Redundancy Reduction in Wireless Sensor Networks** **M. Tech. Thesis**
Supervisor : *Prof. Subrata Gupta (Dept. of Electrical Engineering, NIT Raipur)*
- **N-Coins Problem: An Algorithmic Solution** **B. Tech. Project**
Supervisor: *Prof. Rajat Kanti Pal (Dept. of Information Technology, Assam University Silchar)*

Supervisor: IT Dept., Hindustan Paper Corporation Limited (HPCL), Cachar Paper Mill, Panchgram, Assam

Supervisor: Prof. Anup Kumar Gogoi (Dept. of ECE, IIT Guwahati)

Publications

- **Mrinmoy Bhattacharjee**, S. R. Mahadeva Prasanna and Prithwijit Guha, "Speech/music classification using phase-based and magnitude-based features", in *Speech Communication*, vol. 142, pp. 34-48, 2022.
- **Mrinmoy Bhattacharjee**, S. R. Mahadeva Prasanna and Prithwijit Guha, "Clean vs. Overlapped Speech-Music Detection Using Harmonic-Percussive Features and Multi-Task Learning," in *IEEE/ACM Trans. on Audio, Speech, and Lang. Process.*, (early access), 2022.
- **Mrinmoy Bhattacharjee**, S. R. Mahadeva Prasanna and Prithwijit Guha, "Speech/Music Classification Using Features From Spectral Peaks," in *IEEE/ACM Trans. on Audio, Speech, and Lang. Process.*, vol. 28, pp. 1549-1559, 2020.
- **Mrinmoy Bhattacharjee**, S. R. Mahadeva Prasanna and Prithwijit Guha, "Foreground-Background Audio Separation using Spectral Peaks based Time-Frequency Masks," in *Proc. Int. Conf. on Signal Process. and Commun. (SPCOM)*, 2022, pp. 1-5.
- Moakala Tzudir, **Mrinmoy Bhattacharjee**, Priankoo Sarmah, S. R. Mahadeva Prasanna, "Low-Resource Dialect Identification in Ao Using Noise Robust Mean Hilbert Envelope Coefficients," in *Proc. Nat. Conf. on Commun. (NCC)*, 2022, pp. 1-5.
- Shikha Baghel, **Mrinmoy Bhattacharjee**, S. R. Mahadeva Prasanna, and Prithwijit Guha, "Automatic Detection of Shouted Speech Segments in Indian News Debates." in *Proc. Interspeech 2021*, pp. 4179-4183.
- **Mrinmoy Bhattacharjee**, S. R. Mahadeva Prasanna and Prithwijit Guha, "Detection of Speech Overlapped with Low-Energy Music using Pyknograms," in *Proc. Nat. Conf. on Commun. (NCC)*, 2021, pp. 1-6.
- **Mrinmoy Bhattacharjee**, S. R. Mahadeva Prasanna and Prithwijit Guha, "Classification of Speech vs. Speech with Background Music," in *Proc. Int. Conf. on Signal Process. and Commun. (SPCOM)*, Bangalore, India, 2020, pp. 1-5.
- Shikha Baghel, **Mrinmoy Bhattacharjee**, S. R. Mahadeva Prasanna, and Prithwijit Guha, "Shouted and Normal Speech Classification Using 1D CNN," in *Proc. Int. Conf. on Pattern Recognit. and Machine Intell. (PReMI)*, 2019, pp. 472-480.
- **Mrinmoy Bhattacharjee** and Subhrata Gupta, "Determining redundant nodes in a location unaware Wireless Sensor Network," in *Proc. IEEE Int. Conf. on Advanced Commun. Control and Computing Tech.*, 2014, pp. 858-862.

Awards and Fellowships

- Ph. D. fellowship (Jan, 2016 - Dec, 2020): *Visvesvaraya Ph.D. Scheme, MeitY, GoI. Award No. MEITY-PHD-1230*
- M. Tech. fellowship (Jun 2012 - May 2014): *MHRD, GoI*
- Certificate of appreciation for securing 1st position in Higher Secondary examination in the district: *Deputy Commissioner, Tinsukia District, Assam*
- Certificate of proficiency and a cash award for securing star marks in Higher Secondary examination: *Assam Higher Secondary Education Council*
- Merit Scholarship for excellent performance at matriculation examination: *Oil India Ltd., Duliajan, Assam*

Talks Delivered

- Delivered a session in a workshop on **Introduction to Machine Learning using Python** organized by the Research Scholar Forum, Dept. of EEE, IIT Guwahati.
- Conducted hands-on courses in a one-week Faculty Development Programme on **Artificial Intelligence and Machine Learning**, jointly organized by Electronics and ICT Academics, held from 17th to 21st Dec 2018 through National Knowledge Network of MeitY, Govt. of India.

Language Skills

- English (Full Professional Proficiency)
- Assamese (Native/Bilingual Proficiency)
- Bengali (Native/Bilingual Proficiency)
- Hindi (Native/Bilingual Proficiency)

Public Profiles

- **Google Scholar**: <https://scholar.google.com/citations?user=Xf2X1xIAAAAJ&hl=en>
- **ResearchGate**: <https://www.researchgate.net/profile/Mrinmoy-Bhattacharjee>
- **Github**: <https://github.com/mrinmoy-iitg>
- **LinkedIn**: <https://www.linkedin.com/in/mrinmoy-bhattacharjee-77244b82/>

Referees

Available upon request