



Ritujoy Biswas

Ph.D. Scholar

(Research Domain - Speech Processing)

Swami Bhawan Locality
Behind PNB-OBC, Raipur, Dehradun, UK.

+91- 9760158340

ritujoybiswas1996@gmail.com

[LinkedIn Profile](#)

Career Objective

As a multi-disciplinarian and enthusiastic researcher, I aim to solve problems that span various overlapping domains, and through it, continually enhance my knowledge and expand my skill set.

Education

- 2023 **Indian Institute of Technology Jammu**, *Doctorate in Philosophy*, Department of Electrical Engineering, 8.88/10.
- 2019 **Graphic Era Deemed to-be University, Dehradun**, *Bachelor of Technology, Electronics and Communication Engineering*, 8.97/10.
- 2014 **St. Joseph's Academy, Dehradun**, *Indian School Certificate*, PCM BE, 89%.

Technical Skills

- Coding Python, NLP, C, C++, Data Structures, Assembly(8085 & 8086)
- Tools MATLAB, Jupyter, Mathematica, Cadence Virtuoso, CodeBlocks, Arduino, Atmel Studio
- Simulation App Designer(MATLAB), Simulink, OrCad, ISIS Proteus
- O.S. Linux, Windows
- Other Git, L^AT_EX

Technical Projects

- Apr 2021 **Naïve Bayes Language Classifier using Speech Spectral Features**, *PhD 2nd Sem Project*.
Using a labelled data set to train a Naïve Bayes classifier to recognize a particular language based on extracted spectral features. Code built in Python 3.
- Aug 2018 – **Modelling of Diabetes Mellitus Type-2 using Molecular Communication**, *B.Tech Thesis*.
July 2019 Application of Molecular Communication to Model the Pathological Condition of Diabetes Mellitus Type II, for effective treatment using a Targeted Drug Delivery Mechanism.
- Feb 2018 – **Adaptive Huffman Compression - Algorithm and Code**, *B.Tech 3rd Year Project*.
- May 2018 Developed a functional code for adaptively compressing textual data in C by accounting the entropy of the characters already encountered.
- July 2017 – **Management of Incoming Satellite receiver Data**, *project GAGAN, ISRO*.
Dec 2017 Converting the received data file into spreadsheet with relevant data fields with simple real-time calculations for estimation of accurate elevation angles of transmitting Satellite. Code written in C
- Feb 2017 – **RF-based Wireless Vehicle prototype**, *B.Tech 2nd Year Project*.
May 2017 Radio Frequency based Wirelessly Controlled Vehicle integrating RF and Motor segments

Publications

- May 2023 **Near-end Intelligibility Improvement Through Voice Transformation in Transfer Learning Framework**, *Eurasip, EUSIPCO*.
- Oct 2022 **Optimal Speech Intelligibility Improvement for Varying Car Noise Characteristics**, *JSP, Springer-Nature*.
- June 2022 **Optimal Near-end Speech Intelligibility Improvement using CLPSO-based Voice Transformation in Realistic Noisy Environments**, *CSSP, Springer-Nature*.
- Dec 2021 **Bypassing Optimization Complexity through Transfer Learning & Deep Neural Nets for Speech Intelligibility Improvement**, *NLPAI, ICON*.
- July 2021 **Speech Intelligibility Enhancement using an Optimal Formant Shifting Approach**, *ISPA*.
- June 2021 **Transfer Learning for Speech Intelligibility Improvement in Noisy Environments**, *ISCA, INTERSPEECH*.
- Nov 2016 **Variation in Extinction Cross Section of Rain Drops with Temperature**, *IEEE, ICETCT*.
- Nov 2016 **Frequency Scaling of Slant Path Rain Attenuation for Fade Mitigation in Satellite Communication**, *IEEE, ICETCT*.

Internships

- June-July 2017 **Bharat Electronics Limited, Kotdwara**, *Vocational Trainee*.
2017 Training at the Assembly Line with prime emphasis on Surface Mounting Technology and SMT Machines.
- June-July 2018 **Bharat Heavy Electricals Limited, Haridwar**, *Summer Intern*.
2018 Computerised Numerical Control Machine Maintenance Section.

Achievements

- Aug 2022 **Prime Minister's Fellowship for Doctoral Research**, *SERB-FICCI*, Initiative to Promote Industry Relevant R&D with Academia(IIRRADA), Selected for the Prestigious PMFDR Scheme.
- Feb 2022 **A day Workshop on Social Relevance of Research**, *Dept. of Electrical Engineering, IIT Jammu*, - Awarded 1st prize for Best Application Proposal.

Competency Certifications and Workshops

- July 2022 **Course on Speech and Audio Processing**, *Global Initiative of Academic Network*, IIT Dharwad.
- May 2022 **Industry-Academia Conclave**, *IIT Jammu*.
- Apr 2022 **Fundamentals of Accelerated Data Science with RAPIDS**, *NVIDIA DLI*.
- Sep 2021 **Deep Learning-Based Speech Processing Techniques for Smart Health & Education Systems - Concepts, Recent Trends & Challenges**, *Technology Innovation Hub*, IIT Patna.
- Mar 2021 **AI in Healthcare**, *Department of Electrical Engineering*, IIT Jammu & IIT Kanpur.
- Feb 2018 **Wireless Sensor Networks**, *ECE Dept., GEU*.
- July 2017 **Internet of Things**, *FICE*, Intel.
- Aug-Nov 2016 **Basics of Remote Sensing, GIS and GNSS**, Indian Institute of Remote Sensing.
- Jan-Feb 2016 **Robotics using AVR**, CETPA Infotech.

References

- 1.) **Dr. Karan Nathwani**, *Assistant Professor*.
Dept. of Electrical Engineering, Indian Institute of Technology Jammu.
karan.nathwani@iitjammu.ac.in

2.) **Dr. Md. Irfan Ul Hasan**, *Head of Department.*

Department of Electronics and Communication Engineering, Graphic Era Deemed-to-be University.
hod.electronics@geu.ac.in