

Curriculum Vitae

Sourav Chakraborty, Ph.D.



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- 🌐 https://scholar.google.co.in/citations?user=_ByyVPsAAAAJ

Employment History

- 2018 – █ **Assistant Professor**, Department of Electronics and Communication Engineering, Cooch Behar Government Engineering College, Cooch Behar, West Bengal, India.
- 2013 – 2018 █ **Assistant Professor**, Department of Electronics and Communication Engineering, College of Engineering and Management, Kolaghat, West Bengal, India.

Education

- 2024 █ **Ph.D., Indian Institute of Engineering Science and Technology, Shibpur (IEST)**, Department of Electronics and Telecommunication Engineering.
Thesis title: *Efficient Low Complexity MIMO Detection Algorithm Design for Wireless Systems*.
- 2013 █ **M. Tech., Bengal Engineering and Science University, Shibpur (BESU)**, in VLSI Technology.
- 2011 █ **B.Tech. West Bengal University of Technology** in Electronics and Communication Engineering.

Research Publications

Journal Articles

- 1 S. Berra, **S. Chakraborty**, and R. Dinis, “A low complexity iterative sc-fde receiver for massive mimo systems,” *IEEE Transactions on Vehicular Technology*, vol. 73, no. 7, pp. 10 405–10 420, 2024. DOI: [10.1109/TVT.2024.3381559](https://doi.org/10.1109/TVT.2024.3381559).
- 2 S. Berra, **S. Chakraborty**, R. Dinis, and S. Shahabuddin, “Deep unfolding of chebyshev accelerated iterative method for massive mimo detection,” *IEEE Access*, vol. 11, pp. 52 555–52 569, 2023. DOI: [10.1109/ACCESS.2023.3279350](https://doi.org/10.1109/ACCESS.2023.3279350).
- 3 **S. Chakraborty**, N. B. Sinha, and M. Mitra, “Improved two-dimensional double successive projection algorithm for massive mimo detection,” *International Journal of Electronics and Telecommunications*, vol. 69, no. 1, pp. 139–146, 2023. DOI: <https://doi.org/10.24425/ijet.2023.144343>.
- 4 **S. Chakraborty**, N. B. Sinha, and M. Mitra, “Low complexity, pairwise layered tabu search for large scale mimo detection,” *Wireless Personal Communications*, vol. 128, no. 3, pp. 1689–1713, 2023. DOI: <https://doi.org/10.1007/s11277-022-10015-6>.
- 5 **S. Chakraborty**, N. B. Sinha, and M. Mitra, “Dynamic branch pruning aided low switching fixed complexity sphere decoding for small scale and massive mimo detection,” *Transactions on Emerging Telecommunications Technologies*, vol. 33, no. 7, e4496, 2022. DOI: <https://doi.org/10.1002/ett.4496>.

- 6 **S. Chakraborty**, N. B. Sinha, and M. Mitra, "Likelihood ascent search-aided low complexity improved performance massive mimo detection in perfect and imperfect channel state information," *International Journal of Communication Systems*, vol. 35, no. 8, e5113, 2022. DOI: <https://doi.org/10.1002/dac.5113>.
- 7 **S. Chakraborty**, N. B. Sinha, and M. Mitra, "Low complexity hybrid layered tabu-likelihood ascent search for large mimo detection with perfect and estimated channel state information," *ETRI Journal*, vol. 45, no. 3, pp. 418–432, 2022. DOI: <https://doi.org/10.4218/etrij.2022-0052>.

Conference Proceedings

- 1 **S. Chakraborty**, N. B. S. Berra Sinha, and M. Mitra, "Efficient low-complexity message passing algorithm for massive mimo detection," in *Recent Trends in Intelligence Enabled Research*, 2022, pp. 261–270. DOI: https://doi.org/10.1007/978-981-99-1472-2_22.
- 2 **S. Chakraborty**, N. B. Sinha, and M. Mitra, "Iteration optimized layered tabu search for large scale mimo detection," in *2021 10th International Conference on Internet of Everything, Microwave Engineering, Communication and Networks (IEMECON)*, 2021, pp. 1–5. DOI: [10.1109/IEMECON53809.2021.9689202](https://doi.org/10.1109/IEMECON53809.2021.9689202).
- 3 **S. Chakraborty**, N. B. Sinha, and M. Mitra, "Low complexity mimo detection using complement and lsb set approximation," in *2021 8th International Conference on Smart Computing and Communications (ICSCC)*, 2021, pp. 134–139. DOI: [10.1109/ICSCC51209.2021.9528259](https://doi.org/10.1109/ICSCC51209.2021.9528259).
- 4 **S. Chakraborty**, N. B. Sinha, and M. Mitra, "Performance evaluation of fixed point fsd using i's complement based approximation," in *2020 2nd International Conference on Innovative Mechanisms for Industry Applications (ICIMIA)*, 2020, pp. 190–194. DOI: [10.1109/ICIMIA48430.2020.9074960](https://doi.org/10.1109/ICIMIA48430.2020.9074960).
- 5 **S. Chakraborty**, M. Sahoo, and H. Rahaman, "A 1.8 v 64.9 uw 54.1 db snrd 1st order sigma-delta modulator design using clocked comparator based switched capacitor technique," in *Fifth Asia Symposium on Quality Electronic Design (ASQED 2013)*, 2013, pp. 220–226. DOI: [10.1109/ASQED.2013.6643591](https://doi.org/10.1109/ASQED.2013.6643591).

Skills

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| Languages | Strong reading, writing and speaking competencies for English, Bengali, speaking competencies for Hindi |
| Coding | Matlab, Python, VHDL, Verilog, L ^A T _E X, ... |
| Misc. | Academic research, teaching, training, consultation, L ^A T _E X typesetting and publishing. |

Professional membership

- 2019 - ...  Member of Institution of Engineers (India).
2021 - ...  Member of IEEE.

Teaching Subjects in Under Graduate Level

-  Analog circuit
-  Digital Electronics
-  Analog Communication
-  Digital Communication
-  Digital Signal Processing
-  Mobile Communication

Research domain

- Signal processing
- MIMO detection
- Machine learning
- Wireless communication
- VLSI design

Faculty Development programs and other courses

- Completed two weeks of FDP from 15th January 2024 to 26th January 2024 on "Advanced Pedagogy" from NITTTR Kolkata.
- Completed two weeks of FDP from 26th July, 2021 to 6th August, 2021 on "Python Programming", organized by Electronics and ICT Academies under the "Scheme of financial assistance for setting up of Electronics and ICT Academies" of the Ministry of Electronics and Information Technology (MeitY), Government of India.
- Completed one week of FDP from 14th September, 2020 to 18th September, 2020 on "Internet of Things (IoT)", organized by AICTE Training And Learning (ATAL) Academy.
- Completed 8 Online Modules of MOOCs (as per the AICTE teacher training policy) on February, 2024.
- Completed two weeks on industrial training from 8th March, 2024 to 21st March, 2024, organized by Centre for Development of Advanced Computing (C-DAC), Kolkata, West Bengal, India

References

Available on Request