# Shubham Yadav, Ph.D.

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## Summary

Motivated Assistant Professor with 4+ years of experience specializing in signal processing and soft computing. Strong background in creating insightful research papers which increased university exposure and helped students' learning development. Swiftly establishing strong relationships with pupils, increasing class engagement and enjoyment.

## Research interest

Biomedical Signal Processing, Soft Computing, Neural Networks, Deep learning and Machine Learning.

## Programing languages

Matlab, Python, C, C++, Java (basic).

## Education

2019-2024 **Ph.D. in Electronics and Communication Engineering**
National Institute of Technology, Raipur, Chhattisgarh, India.
Thesis title: Optimal design of adaptive noise cancellers using metaheuristic approach for Biomedical signals.

2013-2015 **M.Tech. in Digital Communication**
Dr. C. V. Raman University, Bilaspur, Chhattisgarh, India
CGPA: 7.07 on scale of 10.
Thesis title: Comparative analysis of Biomedical image compression using wavelet families.

2006-2010 **B.E. in Electronics and Communication Engineering**
Chhattisgarh Swami Vivekanand Technical University, Chhattisgarh, India.
CGPA: 7.54 on scale of 10.

2005-2006 **Class XII**
Chhattisgarh Board of Secondary Education, Raipur, Chhattisgarh, India.
Percentage: 71.3

2003-2004 **Class X**
Chhattisgarh Board of Secondary Education, Raipur, Chhattisgarh, India.
Percentage: 80.5

## Experience

**Currently** **Assistant Professor (CSE, AIML)**
C V Raman Global University, Bhubaneswar, Odisha, India.

2019-2024 **Research Scholar and Teaching Assistant**
National Institute of Technology, Raipur, Chhattisgarh, India.

2016-2019 **Assistant Professor**
Kalinga University, Raipur, Chhattisgarh, India.

2010 - 2013 **Lecturer**
Kirodimal Institute of technology, Raigarh, Chhattisgarh, India.

## Research Publications

### Journal articles published

1. S. Yadav, S. K. Saha, R. Kar, " Evolutionary optimization-based descendent adaptive filter for noise confiscation in electrocardiogram signals," *Physical and Engineering Sciences in Medicine*, Springer, 2025. https://doi.org/10.1007/s13246-025-01631-0
2. S. Yadav, S. K. Saha, and R.Kar, "Efficiently Designed Hammerstein Spline Adaptive Filter for Ocular Noise Extraction from EEG Signals," *Circuits, Systems and Signal Processing*, Vol. 44, pp. 3489-3466, 2025. https://doi.org/10.1007/s00034-024-02973-y
3. S. Yadav, S. K. Saha, R. Kar, "Design of efficient Wiener spline adaptive filter for electrocardiogram signal enrichment," ***Evolving Systems,*** pp. 1-17, 2024. https://doi.org/10.1007/s12530-024-09569-6.
4. S. Yadav, S. K. Saha, R. Kar, "Evolutionary Algorithm-based Optimal Wiener-Adaptive Filter Design: An Application on EEG Noise Mitigation," ***IEEE Transactions on Instrumentation and Measurement*** , vol. 72, article no. 4011912, 2023. https://doi.org/10.1109/TIM.2023.3324345
5. S. Yadav, S. K. Saha, R. Kar, "An application of the Kalman filter for EEG/ERP Signal Enhancement with the Autoregressive Realization," ***Biomedical Signal Processing and Control***, vol. 86, article no. 105213, 2023. https://doi.org/10.1016/j.bspc.2023.105213
6. S. Yadav, S. K. Saha, R. Kar, "Design of Robust Adaptive Volterra Noise Mitigation Architecture for sEMG Signals Using Metaheuristic Approach," ***Expert Systems with Applications***, vol. 221, article no. 119732, 2023. https://doi.org/10.1016/j.eswa.2023.119732
7. S. Yadav, S. K. Saha, R. Kar, D. Mandal, "Noise Confiscation from sEMG through Enhanced Adaptive filtering based on Evolutionary Computing," ***Circuits, Systems and Signal Processing*** , vol. 42, pp. 4096 -4128, 2023. https://doi.org/10.1007/s00034-023-02302-9
8. S. Yadav, S. K. Saha, R. Kar, D. Mandal, "EEG/ERP Signal Enhancement Through an Optimally Tuned Adaptive Filter Based on Marine Predators' Algorithm," ***Biomedical Signal Processing and Control*** vol. 73, article no. 103427, 2022. https://doi.org/10.1016/j.bspc.2021.103427
9. S. Yadav, S. K. Saha, R. Kar, D. Mandal, "Optimized Adaptive Noise Canceller for De-noising Cardiovascular Signal using SOS Algorithm," ***Biomedical Signal Processing and Control*** , vol. 69, article no.102830, 2021. https://doi.org/10.1016/j.bspc.2021.102830

### Journal Pipelined

1. S. Yadav, S. K. Saha, R. Kar, "Robust design of nonlinear adaptive Hammerstein filter Structure using Evolutionary algorithm: real-time application to ECG signals,"***Cardiovascular Engineering and Technology,*** Springer. [under review] (Submitted on 22th Mar 2025)

### Conference proceedings

1. S. Yadav, S. K. Saha and R. Kar, "A Metaheuristic Approach Based Adaptive Filter Design for EEG Noise Mitigation Application," 2024 Third International Conference on Power, Control and Computing Technologies (***ICPC2T-2024***), Raipur, India, 2024, pp. 139-144. https://doi.org/10.1109/ICPC2T60072.2024.10474796.

2. S. Dewangan, S. Yadav and S. K. Saha, "ECG Signal Denoising Using Sparrow Search Algorithm," 2024 Third International Conference on Power, Control and Computing Technologies (***ICPC2T-2024***), Raipur, India, 2024, pp. 757-762. https://doi.org/10.1109/ICPC2T60072.2024.10474630
3. S. Dewangan, S. Yadav and S. K. Saha, "IIR Filter Design Using Sparrow Search Algorithm," 2024 15th International Conference on Computing Communication and Networking Technologies (**ICCCNT-2024**), Kamand, India, 2024, pp. 1-6, https://doi.org/10.1109/ICCCNT61001.2024.10725733.
4. R. Prakash, S. Yadav and S. K. Saha, "A Metaheuristic Approach for the Design of Linear Phase FIR Differentiator," in 2nd IEEE International Conference on Computational Intelligence and Sustainable Engineering Solution (***CISES-2023***), Greater Noida, India, 2023, pp. 744-748. https://doi.org/10.1109/CISES58720.2023.10183596
5. R. Sharma, S. Yadav and S. K. Saha, "Optimal FIR Filter Design using Honey Badger Optimization Algorithm," in 6th IEEE International Conference on Information Systems and Computer Networks (***ISCON-2023***), Mathura, India. Mar 3-4, 2023, pp. 1-6. https://doi.org/10.1109/ISCON57294.2023.10112079
6. S. Yadav, S. K. Saha, R. Kar, "Adaptive Volterra Noise Cancellation Using Equilibrium Optimizer Algorithm," in Advances in Data-driven Computing and Intelligent Systems (***ADCIS-2022***), Lecture Notes in Networks and Systems, vol 698, pp. 1-11, Springer, Singapore. https://doi.org/10.1007/978-981-99-3250-4_1.
7. A. Anand, S. Yadav and S. K. Saha, "An Approach for Linear Phase FIR Low Pass and High Pass Filter Design using AHA Algorithm," in 6th IEEE International Conference on Computing, Communication, Control and Automation (***ICCUBEA-2022***), Pune, India, 2022, pp. 1-5. https://doi.org/10.1109/ICCUBEA54992.2022.10010872

## Courses attended

1. Attended 3rd IEEE International Conference on Power, Control and Computing technologies (***ICPC2T 2024***), National institute of technology, Raipur, Chhattisgarh, India, January 18-20, 2024.
2. Attended 2nd IEEE International Conference on Computational Intelligence and Sustainable Engineering Solution (***CISES 2023***), G. L. Bajaj institute of technology and management, Greater Noida, India, April 28-29, 2023.
3. Attended 6th IEEE International Conference on Information Systems and Computer Networks (***ISCON 2023***), GLA University, Mathura, India, March 3-4, 2023.
4. Attended International conference on Advances in Data-driven Computing and Intelligent Systems (***ADCIS 2022***), BITS Pilani, K. K. Birla GOA campus, India, September 23-25, 2022.
5. Attended 6th IEEE International Conference on Computing, Communication, Control and Automation (***ICCUBEA 2022***), Pimpri Chinchwad College of Engineering, Pune, India, August 26-27, 2022.
6. Attended Faculty development program organized by ***AICTE*** on student induction held at CSVTU, Bhilai, August 3-5, 2019.
7. Attended a workshop on "Speech signal processing and applications" at IIIT-Naya Raipur, Chhattisgarh, in April-2019.
8. Attended IEEE International Conference Recent Innovation in Electrical, Electronics and communication Engineering at KIIT- Bhubaneshwar, Orissa, in July 2018.
9. Attended A 10-Day 33rd Outreach program on "Advance Image Analysis" conducted by Indian institute of remote sensing, Dehradun (***ISRO***) at National institute of technology, Raipur, May 3-12, 2018.
10. Attended a workshop on MATLAB at Dr. C.V. Raman University, Bilaspur, June 2014.
11. Attended a workshop "Research methodology and anti-plagiarism for research integrity" held at CCET, Bhilai, 2009.
12. Attended "Entrepreneurship Awareness Camp (EAC)" organized by Chhattisgarh Industrial and technical Consultancy Centre (***CITCON***), Raipur, 2009.

## Achievements

| | | |
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| Jul | 2025 | Cloud Platform and Product Engineering, Wipro certification |
| Oct | 2020 | Neural Networks and Deep Learning, Coursera certification |
| Sep | 2019 | MHRD, Govt. of India, Fellowship during Ph.D. |

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| Jan | 2019 | | Deputy center superintendent, Kalinga University, Raipur, Chhattisgarh, India |
| Dec | 2018 | | Qualified UGC-NET |
| July | 2018 | | Assistant center superintendent, Kalinga University, Raipur, Chhattisgarh, India |

## Editorial Member for Journals

1. Scientific Reports, Springer

## Review Works

1. IEEE Transactions on Instrumentation and Measurement
2. ISA Transactions, Elsevier
3. Soft Computing, Springer
4. Biomedical Signal Processing and Control, Elsevier
5. Expert Systems with Applications, Elsevier
6. Digital Signal Processing, Elsevier
7. Evolving Systems, Springer
8. Signal, Video and Image Processing, Springer

## References

Prof. Suman Kumar Saha
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Prof. Rajib Kar
Department of Electronics and Communication Engineering
National Institute of Technology, Durgapur, West Bengal, India
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