

Dr. Saif Nalband
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RESEARCH INTEREST

Developing machine learning models for medical diagnosis using biomedical signal processing and imaging.
Applying Machine learning and deep learning for different domains.

WORK EXPERIENCE

Thapar Institute of Engineering and Technology, Patiala October 2022 – present
Assistant Professor

- Instructor in charge (IC) OOPS, C programming, Parallel and Distributing computing
- research in the field of medical diagnosis using machine learning, Blockchain.

IIIT-Pune January 2022 – October 2022
Assistant Professor

- Instructor in charge (IC) of Analysis and Design of Algorithm, Blockchain
- research in the field of machine learning, Blockchain

DY Patil International University - Pune July 2020 – December 2021
Assistant Professor

- Instructor in-charge (IC) of Design & Analysis of Algorithm, DBMS, OOPS using JAVA
- Research in the field of applied machine learning in the domain of biomedical engineering.
- Designing Subjects for specialized tracks and Syllabus of the course.
- Moodle/Collpol Administrator of University.
- Supervising UG, PG and PhD students.

INFANT Research Centre, UCC, Cork, Ireland January 2019– December 2019
Post Doctoral Researcher

I was working on DELPHI project at INFANT research centre to develop an automated seizure detection algorithm using machine learning algorithms. I observe, identify and interpret patterns in ECG signals and extract features. I utilize feature selection and supervised algorithms for classification. The work is carried out in MATLAB and classification is carried out in python using various libraries.

IIIT-Pune July 2018 – December 2018
Assistant Professor

- Instructor in-charge (IC) of Analysis and Design of Algorithm.

BITS Pilani, Goa Campus, India August 2013 - May 2018
Teaching Assistant (Instructor)

- Digital Design & Electronics and instrumentation & Microprocessor and Interfacing •
Contacted lab experiments and tutorials for undergraduate students in MOOC course.
- Assisted the instructor in charge for contacting lab examination.

HCL Infosystem, Mumbai August 2012 - May 2013
Retainership

- Quality Support of the Application.
- Timely Enhancement and development of software with quality.

Project Intern

- Conducting my own research independently
- Assist anting supervisor in conducting different experiments

EDUCATION

2018	PhD	EEE Department	Birla Institute of Technology & Science-Pilani India
2011	M.Tech	Biomedical Signal Processing	Visvesvaraya University India
2008	BE	Computer Engineering	University of Mumbai India

TECHNICAL STRENGTHS

Computer Languages:	C, MATLAB, python, JAVA & Libraries
Software & Tools:	HTML, LaTeX, Excel, MySQL

PUBLICATION Journal

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1. **Saif Nalband**, Pallavi Kiratkar, Maulik Gupta, Mansi Gambhir, Surabhi Sonam, Femi Robert, A. Amalin Prince, Ensemble Techniques for Predictive Modeling of Leishmanial Activity via Molecular Fingerprints, BMC Medical Informatics and Decision Making 25 (1), 378
 2. Patil, A., Mehto, A. & **Nalband, S.** Enhancing skin lesion diagnosis with data augmentation techniques: a review of the state-of-the-art. Multimedia Tools and Applications 84 (22), 25325-25364. <https://doi.org/10.1007/s11042-024-20145-7>
 3. R. Mittal, A. A. Prince, **S. Nalband**, Femi Robert, and Jac Fredo. "Modified-MaMeMi filter bank for efficient extraction of brainwaves from electroencephalograms." *Biomedical Signal Processing and Control* Vol : 69 Pages : 102927, **2021**.
 4. R. Mittal, A. A. Prince, **S. Nalband**, Femi Robert, and Jac Fredo. "Low-power hardware accelerator for detrending measured biopotential data." *IEEE Transactions on Instrumentation and Measurement* Vol: 70 Pages: 1-9 **2020**
 5. **S. Nalband**, CA.Valliappan, A.A. Prince, and A. Agrawal. "Time-frequency based feature extraction for the analysis of vibroarthrographic signals", *Computers and Electrical Engineering, Elsevier Publication*, Volume 69, pages 720-731, **2018**.
 6. **S. Nalband**, A.A. Prince, and A. Agrawal. "An entropy based feature extraction and classification of Vibroarthrographic signal using improved complete ensemble empirical mode decomposition with adaptive noise," *IET Science, Measurement & Technology*, vol. 12, no. 3, pp. 350-359, **2018**,
 7. **S. Nalband**, A. Sundar, A.A. Prince, and A. Agrawal. "Feature selection and classification methodology for the detection of knee-joint disorders," *Computer methods and programs in biomedicine*, 127, 94-104, **2016. Elsevier Publication**,
 8. **S. Nalband**, R.R.Sreekrishna R.R. and A.A.Prince "Analysis of Knee Joint Vibration Signals Using Ensemble Empirical Mode Decomposition," *Elsevier Procedia Computer Science*, vol.89, pp. 820-827, **2016**.

Conference

1. Navpreet, Roul, R.K. and **Nalband, S.**, 2024, December. An Ensembled Parking Space Classifier Across Diverse Weather Conditions. In *International Conference on Distributed Computing and Intelligent Technology* (pp. 240-256). Cham: Springer Nature Switzerland.
2. Roul, R.K. and **S. Nalband**, 2024, December. Multi-document Summarization by Ensembling of Scoring and Topic Modeling Techniques. In *Proceedings of the 21st International Conference on Natural Language Processing (ICON)* (pp. 588-592).

3. Rajendra Kumar Roul, Navpreet and **Saif Nalband**, Unified Scoring and Topic Modeling: A Combined Approach for Superior Multi document Summarization, *17th SoCTA (Soft Computing: Theories and Applications) 2024*.
4. Rajendra Kumar Roul, Navpreet . and **Saif Nalband**, Innovating Multi-Document Summarization through Strategic Fusion , International Conference on Signal and Data Processing [ICSDP] 2024.
5. Maulik Gupta, Anirudh and . **Saif Nalband**, Data-Driven Visual Chart Predictions with Machine Learning, 2nd The International Symposium on Artificial Intelligence (ISAI) 2025.
6. E. Mascarenhas, **S. Nalband**, A. R. J. Fredo and A. A. Prince, "Analysis and Classification of Vibroarthrographic Signals using Tuneable 'Q' Wavelet Transform," *2020 7th International Conference on Signal Processing and Integrated Networks (SPIN)*, **2020**, pp. 65-70, doi: 10.1109/SPIN48934.2020.9071335.
7. S. A. Raurale, **S. Nalband**, G. B. Boylan, G. Lightbody and J. M. O'Toole, "Suitability of an inter-burst detection method for grading hypoxic-ischemic encephalopathy in newborn EEG," *2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, **2019**, pp. 4125-4128, doi: 10.1109/EMBC.2019.8857000.
8. **S. Nalband**, C. A. Valliappan, R. G. A. A. Prince and A. Agrawal, "Feature extraction and classification of knee joint disorders using Hilbert Huang transform," *2017 14th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON)*, **2017**, pp. 266-269, doi: 10.1109/ECTICon.2017.8096224..
9. R. R. Sreekrishna, **S. Nalband** and A. A. Prince, "Real time cascaded moving average filter for detrending of electroencephalogram signals," *2016 International Conference on Communication and Signal Processing (ICCSP)*, **2016**, pp. 0745-0750, doi: 10.1109/ICCSP.2016.7754244..

PATENT

1. PAPERLESS NOTARIZATION AND VERIFICATION PLATFORM USING BLOCKCHAIN TECHNOLOGY
published on April 2024

ACADEMIC POSITION OF RESPONSIBILITY

7 Day SERB Sponsored Workshop on XAI <i>Convenor</i>	February 2024 <i>TIET, Patiala</i>
Department Time Table Committee <i>Member</i>	December 2023-Present <i>TIET, Patiala</i>
SIH 2024 Winner <i>Mentor</i>	December 2024 <i>TIET, Patiala</i>
Toastmasters International Margao <i>VP membership</i>	August 2017 – August 2018 <i>Margao, Goa, India</i>
<ul style="list-style-type: none"> • Core responsibilities is to create a climate that attracts new members • Helps the club to achieve its mission. • Know member goals and enable them to be achieved. 	
Sports Secretary <i>Zephyr Inter college Sport Meet,</i>	August 2007 – August 2008 <i>LTCOE- Navi Mumbai, India</i>
<ul style="list-style-type: none"> • Responsible for contacting the annual sports meet of the college. Organized first inter college football tournament in LTCOE. 	
