

**Dr. Saif Nalband**  
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**710, DCSE, TIET-Patiala, Punjab**  
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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.

IIT-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.

IIT-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

## **BITS Pilani, Goa Campus, India**

- 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

## **ACE Kinesys** *Retainership*

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

## Project Intern

- Conducting my own research independently
- Assisting supervisor in conducting different experiments

**EDUCATION**


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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**


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<b>Computer Languages:</b>	C, MATLAB, python, JAVA & Libraries
<b>Software &amp; Tools:</b>	HTML, LaTeX, Excel, MySQL

**PUBLICATION Journal**

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 vibroarthographic 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 Vibroarthographic 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, *17<sup>th</sup> 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, *2<sup>nd</sup> 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 7<sup>th</sup> 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 14<sup>th</sup> 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 (ICCP), 2016*, pp. 0745-0750, doi: 10.1109/ICCP.2016.7754244..

## PATENT

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

## ACADEMIC POSITION OF RESPONSIBILITY

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

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