Krishna Chandra Patra

Mechanical Engineering **M.Tech**
Biju Patnaik University of Technology Rourkela Male
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Examination	University	Institute	Year	CPI/%
PhD	BPUT Rourkela	IGIT Sarang	2018-Present	
Post Graduation	VSSUT Burla	VSSUT Burla	2014-16	9.56
Graduation	BPUT Rourkela	CVRCE Bhubaneswar	2009-13	7.71
Intermediate/+2	CHSE Odisha	Khalikote junior college,Berhampur	2007-09	76
Matriculation	BSE Odisha	S.K High School	2007	85.32

THESIS & SEMINAR

- **Dynamic Vibration Absorber using Shape Memory Alloy Springs**
  (B.Tech Project | Guide: ***Prof. Saikat Chatterjee****)*

- **Design of an effective damped dynamic vibration absorber for a simply supported beam and parametric optimization to reduce vibration amplitude**
  (M.Tech Seminar | Guide: ***Dr. Mihir Kumar Sutar****)*
  Current work:
  - Benchmark of Unsupervised Machine Learning Algorithms for Condition Monitoring
  - Anomaly Detection in Rotating Machinery using autoencoders based on bidirectional LSTM and GRU Neural Networks
  - Convolutional Neural Network with Mix-up Data Augmentation for Ball Bearing Fault Diagnosis
  - Estimation of the Remaining Useful Life of Aircraft Engines Using the CNN-LSTM-GRU Hybrid Model

Publications

Journal Articles

- S Pani, K Senapati, KC Patra, P Nath (2017), Review of an effective dynamic vibration absorber for a simply supported beam and parametric optimization to reduce vibration amplitude, *Int. J. Eng. Res. Appl*, published online ahead of print. DOI: 10.9790/9622-0707034977

- Patra KC, Sethi RN, Behera DK (2022), "Anomaly Detection in Rotating Machinery using autoencoders based on bidirectional LSTM and GRU Neural Networks", *Turk J Elec Eng & Comp Sci*, published online ahead of print. DOI: 10.55730/1300-0632.3870

- Patra KC, Sethi R, Behera DK (2025), "Estimation of the remaining useful life of aircraft engines using a CNN-LSTM-GRU hybrid model", *International Journal of System Assurance Engineering and Management*, vol. 16, no. 9, published online ahead of print. DOI: 10.1007/s13198-025-02911-4

Conference proceedings (peer-reviewed)

- Patra K.C., Sethi R.N., Behera D.K. (2021), "Benchmark of Unsupervised Machine Learning Algorithms for Condition Monitoring". In: Udgata S.K., Sethi S., Srirama S.N. (eds) *Intelligent Systems. Lecture Notes in Networks and Systems*, vol 185. Springer, Singapore. DOI:10.1007/978-981-33-6081-5_17.

- Patra K.C., Sethi R.N., Brahma B. (2024), "Fault Detection Using Vibration Analysis and Particle Swarm Optimization Check for updates of the Rolling Element Bearing". In: Proceedings of the 15th International Conference on Vibration Problems: ICoVP 2023. Springer Nature. DOI:10.1007/978-981-99-5922-8_7.

- Patra K.C., Sethi R.N., Behera D.K. (2021c). A Study of Signature Analysis for Cantilever Beam Crack Detection.ăNational Conference on Engineering, Science, Technology and Management, 7281.

- Patra K.C., Sethi R.N., Behera D.K. (2021a). A review of wavelet transform-based machine condition monitoring and fault diagnosis.ăNational Conference on Engineering, Science, Technology and Management, 8290.

- Patra K.C., Sethi R.N., Behera D.K. (2021b). A Study of Acoustic Based Fault Detection Methods With Rolling Element Bearing.ăNational Conference on Engineering, Science, Technology and Management, 9195.

Patents

- Meenakshi, Nandal R, Nagar R, Jain D C, Nadikattu R R, Patra K C (2021), *Driver Alcohol Level and Sleeping Status Accident Place Detection and Notification System using Machine Learning and Deep Learning Programming.*, Indian Patent Application Number: 202111008302.

TECHNICAL SKILLS

- **Programming & Scripting Languages**: C, C++, Fortran, Python
- **Tools & Libraries**: MATLAB, LaTeX, OpenCV, Ansys, ABAQUS

WORK EXPERIENCE & FDP

- **Lecturer** | ***Gandhi Institute of Industrial Technology Affiliated to BPUT, Rourkela*** *(July13-June'14)*]
- **Assistant Professor** | ***Indira Gandhi Institute of Technology, Sarang*** *(Aug16-July'18)*
  - Actively participated in Five Days Workshop organized by Department of Electrical Engineering, CAPGS, BPUT, Rourkela from $1st - 5th$ September 2020.
  - Participated & completed successfully AICTE Training And Learning (ATAL) Academy Online FDP on " Data Sciences" from 2020-9-7 to 2020-9-11 at University of Hyderabad.
  - Participated & completed successfully AICTE Training And Learning (ATAL) Academy Online FDP on "Block chain" from 2020-8-31 to 2020-9-4 at UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY.
  - participated and successfully completed in the Faculty Development Programme on ADVANCES IN MATERIALS & MACHINING PROCESSES FOR RECENT INDUSTRIAL APPLICATIONS Organized by Department of Production Engineering, VSSUT, Burla during 7th to 11th September 2020 under the Sponsorship of TEQIP-3, GOI.
  - Proactively Participating in the One Week Online Faculty Development Programme on "Vibration Analysis & Condition Monitoring for Rotating Machines Organized at IGIT, Sarang, India during 05-09 October, 2020 under TEQIP-III.
  - Participated in TEQIP-III sponsored Two Weeks Online Short Term Course on Recent Trends in Mechanical Engineering (RTME-2021) organized by the Department of Mechanical Engineering, IGIT, Sarang, 759146 from $1st - 12th$ February 2021.
  - participated & completed successfully AICTE Training And Learning (ATAL) Academy Online FDP on "FRP COMPOSITES" from 18/01/2021 to 22/01/2021 at L D COLLEGE OF ENGINEERING.

POR & EXTRA-CURRICULARS

- **Teaching Assistant** for the course, **PME7J001 : Mechanical Vibration** *(Aug'18-July'19)*
- **FDP Co-ordinator** at IGIT Sarang *(Dec'19)*
- **Teaching Subject** for the course, **PME3I102 : Fluid Mechanics & Hydraulics Machines**, supervised the labs for the course, evaluated their lab assignments, quizzes and examination papers *(Jan'17-July'17 & Jan'18-July'18)*
- **Teaching Subject** for the course, **AE : AUTOMOBILE ENGINEERING**, supervised the labs for the course, evaluated their lab assignments, quizzes and examination papers *(Aug'16-Dec'16 & Aug'17-Dec'17)*
- **Teaching Subject** for the course, **PBE1B101 : Basics of Mechanical Engineering**, supervised the labs for the course, evaluated their lab assignments, quizzes and examination papers *(Jan'16-July'16 & Jan'17-July'17)*
- Successfully completed the training program on "Industrial Automation" in Hydraulic, Pneumatics, PLC control, Mechatronics and Robotics at C.V.Raman Bosch Rexroth Centre of Excellence.
- Recipient of Business English Communication (BEC) certificate conducted by Cambridge University.
- Convergence technology innovation lab (CTIL) certification by HCL.
- Qualify in gate 2015 with a GATE score of 706 having all india rank of 2633.
- Qualify in csir-ugc NET 2014 with a rank of 168 in engineering science.
- Selected for admission into full-time Ph.D. under AICTE-NDF scheme - 2018 at IGIT, Sarang.
- Successfully completed NPTEL Online Certification on "Fundamentals of Artificial Intelligence" conducted by IIT Guwahati.
- Successfully completed NPTEL Online Certification on "Introduction to Machine Learning" conducted by IIT Madras.
- Successfully completed NPTEL Online Certification on "Scientific Computing Using Matlab" conducted by IIT Madras.
- Successfully completed SWAYAM Online Certification on "Research Methodology" conducted by CEC & National Law University Delhi.