Curriculum Vitae

Dr. Rismaya Kumar Mishra

Current Address:	Room 4104, Building N7-4, Mechanical Engineering Department, Korea Advanced Institute of Science & Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon, South Korea, Zip Code-34139
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Date of Birth:	April 19, 1995

Research Interests

- Condition Monitoring, Machinery Fault Diagnosis and Prognosis, Noise, Vibration and Harshness (NVH), Applied Machine Learning, Generative AI

Research Experience

10/2025-Till date **Postdoctoral Researcher**
Korea Advanced Institute of Science and Technology (KAIST), South Korea (QS Ranking=53)
Research Topic: Machinery Condition Monitoring Using Large Language Models
Advisor: Dr. Yong-Hwa Park (Associate Professor, ME, KAIST, South Korea)

07/2025-09/2025 **Research Associate**
Indian Institute of Technology (IIT) Delhi, India (QS Ranking=123, NIRF Ranking=2)
Research Topic: Development of Signal Noise Removal Technology for Motors and Inverters
Advisor: Dr. S. Fatima (Associate Professor, CART, IIT Delhi, India)

04/2025-06/2025 **Early-Doc Fellow**
Indian Institute of Technology (IIT) Delhi, India (QS Ranking=123, NIRF Ranking=2)
Research Topic: Development of Signal Noise Removal Technology for Motors And Inverters
Advisor: Dr. S. Fatima (Associate Professor, CART, IIT Delhi, India)

Academic Background

12/2019- 04/2025	**Doctor of Philosophy in Machinery Condition Monitoring** **Indian Institute of Technology (IIT) Delhi, India** (QS Ranking=123, NIRF Ranking=2) Thesis: Development of Multi-fault Diagnosis Strategies for Rotating Machines CGPA: 10.0/10.0 Supervisor(s): Dr. S. Fatima (Associate Professor, CART, IIT Delhi, India) and Prof. A.R. Mohanty (BIS Standardization Chair Professor, ME, IIT Kharagpur, India)
07/2017- 07/2019	**Master of Technology in Mechanical Engineering** **National Institute of Technology (NIT) Srinagar, India** (NIRF Ranking=73) Specialisation: Industrial Tribology & Maintenance Management Thesis: Study of wear behaviour of Ni-Cr-B-Si hardface coatings made by Cold Metal Transfer (CMT) and Plasma Transfer Arc (PTA) welding processes CGPA: 8.532/10.0 (Gold Medallist) Supervisor(s): Prof. G. A. Harmain (Professor (HAG), NIT Srinagar, India) and Dr. Hemant Kumar (Scientist-F, IGCAR, Tamil Nadu, India)
08/2012- 07/2016	**Bachelor of Technology in Mechanical Engineering** **Gandhi Institute for Education & Technology, Bhubaneswar, India** Thesis: Experimentation and Optimization of WEDM Process Using Full Factorial Design Integrated PCA Approach CGPA: 8.01/10.0
08/2010- 07/2012	**Intermediate in Science** **Newton College of +2 Science, Sambalpur, India** Major Courses: Mathematics, Physics and Chemistry, Information Technology Marks: 71.5%
08/2008- 07/2010	**High School** **Govt. High School, Kuchinda, India** Major Courses: Mathematics, Science and Social Science Marks: 79.83%

Publication Matrices

- Total Publications: 20+, Citations (Google Scholar): 500+, h-index: 12, i10-index: 14

Journal Publications

1. **Mishra, R.K.,** Chaudhary, A., Fatima, S., Mohanty, A.R. and Panigrahi, B.K., "Adaptive Information Fusion for Multi-fault Diagnosis using Multi-Stream Convolutional Neural Network", Measurement, 2026. (SCIE, IF: 5.6, Citations: 0)

2. **Mishra, R. K.,** Chaudhary, A., Fatima, S., Mohanty, A. R. and Panigrahi, B. K., "A Systematic Review on Advancement and Challenges in Multi-fault Diagnosis of Rotating Machines", Engineering Applications of Artificial Intelligence, 2025. (SCIE, IF: 8.0, Citations: 21)

3   **Mishra, R. K.,** Chaudhary, A., Fatima, S., Mohanty, A. R. and Panigrahi, B. K., "Multi-fault Diagnosis with Wavelet Assisted Stacked Image Fusion and Dual Branch CNN", Applied Soft Computing, 2025. (SCIE, IF: 6.6, Citations: 19)

4   **Mishra, R. K.,** Chaudhary, A., Fatima, S., Mohanty, A. R. and Panigrahi, B. K., "A Generalized Method for Diagnosing Multi-Faults in Rotating Machines Using Imbalance Datasets of Different Sensor Modalities", Engineering Applications of Artificial Intelligence, 2024. (SCIE, IF: 8.0, Citations: 45)

5   **Mishra, R. K.,** Chaudhary, A., Fatima, S., Mohanty, A. R. and Panigrahi, B. K., "Multi-fault Diagnosis of Rotating Machine Under Uncertain Speed Conditions", Journal of Vibration Engineering & Technologies, 2024. (SCIE, IF: 2.4, Citations: 25)

6   Chaudhary, A., **Mishra, R. K.,** Fatima, S., and Panigrahi, B. K., "Multi-modal Fusion Based Fault Diagnosis of Electric Vehicle Motor for Sustainable Transportation", IEEE Transactions on Transportation Electrification, 2024. (SCIE, IF: 8.3, Citations: 12)

7   Kumar, H., **Mishra, R. K.** and Harmain, G. A., "Effect of Mating Material on Wear Behaviour of Ni-based Hardface Coating", Part L: Journal of Materials: Design and Applications, 2024. (SCIE, IF: 2.2, Citations: 4)

8   Chaudhary, A., **Mishra, R. K.,** Fatima, S., and Panigrahi, B. K., "Multi-Input CNN based Vibro-acoustic Fusion for Accurate Fault Diagnosis of Induction Motor", Engineering Applications of Artificial Intelligence, 2023. (SCIE, IF: 8.0, Citations: 170)

9   **Mishra, R. K.,** Chaudhary, A., Fatima, S., Mohanty, A. R. and Panigrahi, B. K., "A Fault Diagnosis Approach Based On 2D-Vibration Imaging for Bearing Faults", Journal of Vibration Engineering & Technologies, 2023. (SCIE, IF: 2.4, Citations: 42)

10   **Mishra, R. K.,** Kumar, H., Harmain, G. A. and Albert, S. K., "Comparative Wear Behaviour Study of Ni-Cr-B-Si Hardface Coatings Fabricated by Plasma Transfer Arc and Cold Metal Transfer Welding", Part L: Journal of Materials: Design and Applications, 2023. (SCIE, IF: 2.2, Citations: 12)

11   **Mishra, R. K.,** Chaudhary, and Fatima, S., Mohanty, A. R. and Panigrahi, B. K., "A Self-adaptive Multiple Fault Diagnosis System for Rolling Element Bearings", Measurement Science and Technology, 2022. (SCIE, IF: 3.4, Citations: 33)

12   **Mishra, R. K.,** Chaudhary, A., Mohanty, A. R., and Fatima, S. "An Intelligent Bearing Fault Diagnosis Based on Hybrid Signal Processing and Henry Gas Solubility Optimization", Part C: Journal of Mechanical Engineering Science, 2022. (SCIE, IF: 1.7, Citations: 59)

13   **Mishra, R. K.,** Kumar, H., Harmain, G. A. and Albert, S. K., "Wear Performance of Ni-Cr-B-Si Hardface Coatings Fabricated by Cold Metal Transfer Welding", Part C: Journal of Mechanical Engineering Science, 2022. (SCIE, IF: 1.7, Citations: 15)

14   **Mishra, R. K.,** Nag, S., Behera, S. K. and Sahu, S. N., "Experimentation and Optimization of Surface Roughness in WEDM Process using Full Factorial Design integrated PCA Approach", International Journal of Engineering Research and Applications, 2016. (DOAJ, IF: NA, Citations: 0)

Conference Proceedings

1. **Mishra, R. K.,** Yi, W., Jung, W., Kim, J., Choi, S., Park, Y. H., "Integration of Large Language Model for Smart Maintenance of Rotating Machines", 32nd International Congress on Sound and Vibration (ICSV32), Istanbul, Türkiye, 2026 (Accepted) (Citations: NA)

2. Yi, W., **Mishra, R. K.,** Park, Y. H., "Cross-talk based multi-task learning for fault classification of physically coupled machine system", 32nd International Congress on Sound and Vibration (ICSV32), Istanbul, Türkiye, 2026. (Accepted) (Citations: NA)

3. **Mishra, R. K.,** and Park, Y. H., "A Comprehensive Review on Multi-fault Diagnosis of Rotating Machines in Industrial Applications" in 3rd International Conference on Emerging Technologies in Mechanical Engineering (ETME-2025), p. 77, Jeongseon, South Korea, 2025. (Citations: 0)

4. **Mishra, R. K.,** Fatima, S., and Mohanty, A. R., "Multi-fault diagnosis of industrial rotating machines using advanced sliding window and WSST-CNN" in 53rd International Congress and Exposition on Noise Control Engineering (Inter-Noise 2024), Vol-270(7), pp. 4448-4458, Nantes, France, 2024. (Citations: 2)

5. **Mishra, R. K.,** Mian, T., Fatima, S., Mohanty, A. R., and Panigrahi, B.K., "Motor and Bearing Multi-fault Diagnosis with Sound Quality Metrics" in 52nd International Congress and Exposition on Noise Control Engineering (Inter-Noise 2023), Vol-268(8), pp. 57-67, Chiba, Japan, 2023. (Citations: 3)

6. **Mishra, R. K.,** Chaudhary, A., Fatima, S., Mohanty, A. R., and Panigrahi, B.K., "Realistic Condition-based Anomaly Detection of Multi-faults in Rotating Machines", in 3rd International Conference on Sustainable Energy and Future Electric Transportation (SEFET), Bhubaneswar, India, 2023. (Citations: 9)

7. **Mishra, R. K.,** Fatima, S., Mohanty, A.R., and Panigrahi, B. K., "An approach for diagnosing multi-faults of rotating machines with acoustic signature" in 50th National Symposium on Acoustics (NSA-2023), Sambalpur, India, 2023. (In Press) (Citations: NA)

8. **Mishra, R. K.,** Chaudhary, A., Mohanty, A. R., and Fatima, S., "A Comparative Study of Time-frequency Analysis for the Application of Fault Diagnosis System" in International Congress on Sound and Vibration (ICSV28), Singapore, pp.1-8, 2022. (Citations: 2)

9. Chaudhary, A., **Mishra, R. K.,** Fatima, S., and Panigrahi, B. K., "Fault Diagnosis of Induction Motor Under Varying Operating Condition for Electric Vehicle" in 2022 IEEE IAS Global Conference on Emerging Technologies (GlobConET), Arad, Romania, 2022. (Citations: 13)

10. **Mishra, R. K.,** Chaudhary, A., Mohanty, A. R., and Fatima, S., "Performance Evaluation of Support Vector Machine for System Level Multi-fault Diagnosis" in 2022 Prognostics and Health Management Conference (PHM 2022), London, UK, 2022. (Citations: 15)

11. **Mishra, R. K.,** Chaudhary, A., Mohanty, A. R., and Fatima, S., "Multi Domain Bearing Fault Diagnosis using Support Vector Machine" in IEEE International Conference on

Computing, Power and Communication Technologies (GUCON), Kuala Lumpur, Malaysia, 2021. (Citations: 31)

12 **Mishra, R. K.,** Kumar, H., Harmain, G. A. and Albert, S. K., "Wear investigation of Ni-Cr-B-Si hardface coatings under similar and dissimilar mating conditions" in National Seminar on Welding Science and Technology (NSWEST), Chennai, India, 2021. (Citations: 0)

Book Chapters

1 **Mishra, R. K.,** Chaudhary, A., Fatima, S., Mohanty, A. R., and Panigrahi, B. K., "Development of Multi-fault Diagnosis Strategy of Rotating Machines using Deep Neural Networks", Lecture Notes in Mechanical Engineering, 2024. (In Press) (Citations: NA)

2 Chaudhary, A., Saad, A.A., **Mishra, R. K.,** Fatima, S., and Panigrahi, B. K., "Wavelet Neural Networks Based Diagnostic Strategy for Electric Vehicles: A Study on PMSM and BLDC Motors", Lecture Notes in Mechanical Engineering, 2024. (In Press) (Citations: NA)

Patent

1 Chaudhary, A, Mian, T., **Mishra, R. K.,** Fatima, S. and Panigrahi, B. K., Two-Wheeler Electric Vehicle Fault Simulator, Indian Patent Application No. 202111028753. (Filed on July 14, 2023)

Project Handling/Participating Experience

1 Development of Signal Noise Removal Technology for Motors and Inverters- **Hyundai Motor Company, South Korea** (04/2025 - 09/2025)

2 Evaluation of Health Monitoring System for Induction Motors- **Tata Steel, India** (05/2024 - 10/2024)

3 Condition Monitoring System Evaluation for Wind Turbine- **Adani Green Energy Ltd., India** (12/2022 - 05/2023)

Equipment/Instrument Handing Experience

- Machinery Fault Simulator, SpectraQuest
- Head and Torso Simulator, B&K
- Acoustic Camera, B&K
- Sound Level Meter, B&K
- Sonoscout, B&K
- Data Acquisition System, Oros
- Data Acquisition System, B&K
- Impedance Tube, B&K
- Photon, B&K
- Accelerometer and Microphone, B&K
- Thermal Imaging Camera, FLIR
- Hall Effect Sensor, Tektronix

Software Skills

MATLAB, Python, ANSYS, CREO, CATIA, Solid Works, Siemens NX, Auto CAD, Origin, MS Office Package

Teaching Assistantship Experience

- CTL729: Automotive Reliability and Life Testing *(Postgraduate Course)*
- CTL731: Automotive Noise and Condition Monitoring *(Postgraduate Course)*
- ITL702: Diagnostic Maintenance and Condition Monitoring *(Postgraduate Course)*
- ITL709: Maintenance Planning and Control *(Postgraduate Course)*
- ITL711: Reliability, Availability and Maintainability *(Postgraduate Course)*

Grants/Scholarships/Fellowships

10/2025-Till date	InnoCORE Postdoctoral Fellowship
04/2025-06/2025	IRD Early-Doc Fellowship
07/2024	DST International Travel Support (ITS)
08/2023	I-INCE, USA Young Professional Congress Attendance Grants
10/2022	Research Excellence Travel Award (RETA)
04/2022	Research Scholar Travel Allowance (RSTA)
12/2019-12/2024	Full Time Institute Assistantship for Ph.D.
07/2017-07/2019	Full Time Institute Fellowship for M.Tech
07/2012-07/2016	Medhabruti Scholarship during B.Tech

Awards and Recognitions

- Young Professional Award in Inter-Noise Conference, Chiba, Japan, 2023
- Best paper award in National Symposium on Acoustics, Sambalpur, India, 2023
- Invited Session Chair of PHM 2022 Conference, London, UK, 2022
- Gold Medallist of Industrial Tribology & Maintenance Management (Mechanical Engineering), NIT Srinagar, 2021
- First Prize for Paper Presentation in GIET, Bhubaneswar, 2016
- First Prize for Model Presentation in GIET, Bhubaneswar, 2015

Memberships

- Life Member (Senior Member) of Indian Society of Mechanical Engineers (ISME)
- Life Member of Acoustical Society of India (ASI)
- Life Member of Condition Monitoring Society of India (CMSI)
- Student Associate Member of INCE-USA (2023-24)
- Student Member of the ASME (2022-24)
- Member of the IEEE (2022-23)
- Member of IEEE Industry Applications Society (2023)
- Member of IEEE Young Professionals (2023)

Mar 2026
KAIST, South Korea   **Dr. Rismaya Kumar Mishra**