# Dr. Monika

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## Education

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| 2019 – 2024 | **Ph.D., Computer Science & Engineering, National Institute of Technology Srinagar, J&K.** <br> Thesis title: *Protein Methylation sites Prediction based on spatial features of Amino Acids using Deep Vision and Explainable AI.* |
| 2014 – 2016 | **M.Tech., Computer Science & Engineering, National Institute of Technology Jalandhar, Punjab.** <br> Thesis title: *DoS Attack Detection Technique Using Back Propagation Neural Network.* |
| 2008 – 2012 | **B.Tech. Computer Science & Engineering, Guru Jambheshwar University Hisar, Haryana.** |

## Employment History

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| 18/03/2024 – 09/08/2024 | **Assistant professor,** School of Computer Science & Engineering, Lovely Professional University Phagwara, Punjab. |
| 17/07/2018 – 31/05/2019 | **Guest Faculty,** Computer Science & Engineering Department, National Institute of Technology Hamirpur, Himachal Pradesh. |
| 11/01/2018 – 15/05/2018 | **Guest Faculty,** Computer Science & Engineering Department, Malaviya National Institute of Technology Jaipur, Rajasthan. |
| 31/07/2017 – 22/12/2017 | **Assistant Professor,** Computer Science & Engineering Department, Chandigarh University, Punjab. |

## Research Publications

### Journal Articles

1. G. Dwivedi, **M. Khandelwal**, R. K. Rout, S. Umer, S. Mallik, and H. Qin, "Rmsxai: Arginine methylation sites prediction from protein sequences using machine learning algorithms and explainable artificial intelligence," *Discover Applied Sciences*, vol. 6, no. 7, p. 329, 2024. ⊘ DOI: https://doi.org/10.1007/s42452-024-05898-y.

2. **M. Khandelwal** and R. Kumar Rout, "Deepprms: Advanced deep learning model to predict protein arginine methylation sites," *Briefings in Functional Genomics*, elae001, 2024. ⊘ DOI: https://doi.org/10.1093/bfgp/elae001.

3. **M. Khandelwal**, R. Kumar Rout, S. Umer, S. Mallik, and A. Li, "Multifactorial feature extraction and site prognosis model for protein methylation data," *Briefings in Functional Genomics*, vol. 22, no. 1, pp. 20–30, 2023. ⊘ DOI: https://doi.org/10.1093/bfgp/elac034.

4. **M. Khandelwal** and R. K. Rout, "Prmxai: Protein arginine methylation sites prediction based on amino acid spatial distribution using explainable artificial intelligence," *BMC bioinformatics*, vol. 24, no. 1, p. 376, 2023. ⊘ DOI: https://doi.org/10.1186/s12859-023-05491-x.

5. **M. Khandelwal**, R. K. Rout, S. Umer, *et al.*, "A pattern classification model for vowel data using fuzzy nearest neighbor." *Intelligent Automation & Soft Computing*, vol. 35, no. 3, 2023. ⊘ DOI: https://doi.org/10.32604/iasc.2023.029785.

**6** R. K. Rout, S. Umer, **M. Khandelwal**, *et al.*, "Identification of discriminant features from stationary pattern of nucleotide bases and their application to essential gene classification," *Frontiers in Genetics*, vol. 14, p. 1 154 120, 2023. 🔗 DOI: 10.3389/fgene.2023.1154120.

**7** **M. Khandelwal**, S. Sheikh, R. K. Rout, S. Umer, S. Mallik, and Z. Zhao, "Unsupervised learning for feature representation using spatial distribution of amino acids in aldehyde dehydrogenase (aldh2) protein sequences," *Mathematics*, vol. 10, no. 13, p. 2228, 2022. 🔗 DOI: https://doi.org/10.3390/math10132228.

## Conference Proceedings

**1** S. Krishana, **M. Khandelwal**, R. K. Rout, and S. Umer, "Harnessing the power of machine learning algorithms for landslide susceptibility prediction," in *International Conference on MAchine inTelligence for Research & Innovations*, Springer, 2023, pp. 95–104.

**2** **M. Khandelwal**, R. Kumar Rout, and S. Umer, "Prediction of protein-protein interaction using support vector machine based on spatial distribution of amino acids," in *International Conference on Advances and Applications of Artificial Intelligence and Machine Learning*, Springer, 2022, pp. 23–32. 🔗 DOI: https://doi.org/10.1007/978-981-99-5974-7_3.

**3** **M. Khandelwal**, R. K. Rout, and S. Umer, "Protein-protein interaction prediction from primary sequences using supervised machine learning algorithm," in *2022 12th International Conference on Cloud Computing, Data Science & Engineering (Confluence)*, IEEE, 2022, pp. 268–272. 🔗 DOI: 10.1109/Confluence52989.2022.9734190.

**4** **M. Khandelwal**, D. K. Gupta, and P. Bhale, "Dos attack detection technique using back propagation neural network," in *2016 International Conference on Advances in Computing, Communications and Informatics (ICACCI)*, IEEE, 2016, pp. 1064–1068. 🔗 DOI: 10.1109/ICACCI.2016.7732185.

## Books and Chapters

**1** **M. Khandelwal**, N. Shabbir, and S. Umer, *Extraction of Sequence-Based Features for Prediction of Methylation Sites in Protein Sequences*. CRC Press, 2022, pp. 29–46. 🔗 DOI: 10.1201/9781003246688-2.

# Skills

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| Languages | 🔖 Reading, writing and speaking competencies for English, Hindi. |
| Coding | 🔖 C, C++, Java, Python, LaTeX |
| Misc. | 🔖 Academic research, teaching, training, LaTeX typesetting and publishing. |

# Miscellaneous Experience

## Awards and Achievements

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| GATE | 🔖 qualified in 2014, 2017, 2018, and 2019. |
| UGC NET JRF | 🔖 qualified in 2019. |
| UGC NET | 🔖 qualified for **Assistant Professor** in 2017 and 2019. |

## Certification

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| 2024 | 🔖 participated in **GURU-DAKSHTA: Faculty Induction Program (FIP)** at LPU Phagwara from $27^{th}$ April 2024 to $03^{rd}$ June 2024. |

## Miscellaneous Experience (continued)

2023   🔖 member of the organizing team **(Student Coordinator)** for 5 days workshop on **AGRI ROBOTICS 2023** organized at National Institute of Technology Srinagar from $9^{th}$ to $13^{th}$ October 2023.

2018   🔖 participated in one-week **Faculty Development Programme** on **AI & Machine Learning** organized by Electronics and ICT Academics through National Knowledge Network from $4^{th}$ to $8^{th}$ June 2018.

  🔖 participated in one-week **Faculty Development Programme** on **Big Data Analytics** organized at MNIT Jaipur from $21^{st}$ to $25^{th}$ May 2018.

2015   🔖 participated in one-day workshop on **Cloud Computing and Big Data Analytics** organized at Dr B R Ambedkar National Institute of Technology Jalandhar on $19^{th}$ May 2015.

2009   🔖 undergone a certified course in **Core JAVA**.

## References

**Dr. Ranjeet Kumar Rout**
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