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# Nikhil Sharma

## Research Interest

Areas  Machine Learning, Deep Learning, Computer Vision, Edged based devices, Health Informatics

## Education

2023–Present  **Master of Science, Computer Science**, *Illinois Institute of Technology*, Chicago.
Ongoing

2017–2021  **Bachelors of Technology, Electronics and Communications Engineering**, *Jaypee Institute of Information Technology*, Noida.
CGPA :7.86/10

## Experience

### Industrial Experience

November,2021 **Matdun Labs India Pvt. Ltd.**.
– April 2023  Designing different computer vision based detection modules for the edge based devices

Designation :  **Computer Vision/Artificial Intelligence Research Engineer**

March,2021 –  **CODE Prime India Pvt. Ltd.**.
June 2021  Designed multiple AI based modules such as OCR Detector, Audio based sentiment analysis, audio based person detection etc.

Designation :  **Artificial Intelligence Research Intern**

### Research Experience

May 2020 –  **National Institute of Technical Teachers Training & Research** .
Febru-  Worked on various projects under "In Silico Analysis of 10000 Genomic Sequences of COVID19 around the
ary,2022  World including India to Identify Genetic Variability and potential Molecular Targets in Virus and Human" issued by Science and Engineering Research Board, Government of India

Advisor :  **Dr. Indrajit Saha**, *Associate Professor, Department of Computer Science*, NITTTR Kolkata (*Personal Web-page*)

June 2019 –  **Indian Institute of Technology, Delhi**.
September,  Worked on project related to T1 imaging biomarkers as the response for neoadjuvant chemotherapy in
2020  Osteosarcoma, which was submitted as an abstract in ISMRM 2020 and later on full study was published as a article in European Journal of Radiology in March 2022

Advisor :  **Dr. Amit Mehndiratta**, *Department of Biomdecial Engineering*, Indian Institute of Technology Delhi (*Personal Web-page*)

August 2020 –  **Jaypee Institute of Information Technology, Noida**.
May, 2021  Worked on major project-I and II over topic "Tranfer based learning methodolgy to detect the protein-protien interactions in between SARS-CoV-2 and human protien"

Advisor :  **Dr. Sajai Vir Singh**, *Department of Electronics and Communication Engineering*, Jaypee Institute of Information Technology (*Personal Web-page*)

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| December 2018 – present | ***Jaypee Institute of Information Technology***.<br>Working on different projects based on the applications of Deep Learning such as detection, classification of the stages of COVID-19 through X-rays, Skin diseases classification detection |
| Advisor : | **Dr. Satish Chandra**, *Professor, Department of Computer Science and IT*, JIIT Noida (*Personal Web-page*) |

## Academic Courses

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| Major Coursework | Signal Processing, Analogue Communication, Digital Communication, Information Theory, VLSI, Digital Signal Processing, Antenna Theory, Transformers, Circuit Design |
| Electives | Machine Learning, Natural Language Processing, Image Processing, Deep Learning, Calculus, Linear Algebra, Data Analytic Number Theory, Probability and Random Processes |

## Skills

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| Programming Languages | Python, PyTorch, keras, tensorflow, MATLAB, R, C, C++ |
| Libraries | pandas, NumPy, Matplotlib, Dask, pydicom, pytorch, Bio-python, Keras, Docker |
| Certificates | Omics Data Analysis, Knowledge Graph, Machine Learning and Artificial Intelligence |

## Publications

### Journal Articles

2022 EB. Kayal and **N Sharma and Sharma, R. and Bakhshi, S. and Kandasamy, D. and Mehndiratta, A.** T1 mapping as a surrogate marker of chemotherapy response evaluation in patients with osteosarcoma. ***European Journal of Radiology***, volume 148, page 110170. Elsevier, 2022, **( Impact Factor:4.531 )**.

2022 Ghosh, N. and Saha, I. and **N Sharma** and Nandi, S. Bioinformatics pipeline of indian sars-cov-2 genomes showing genetic variability to synthetic vaccine design. ***International Immunopharmacology***, volume In Press. Elsevier, 2022, **( Impact Factor:4.932 )**.

2022 N. Ghosh, I. Saha, **N Sharma**, and JP. Sarkar. Human mirnas to identify potential regions of sars-cov-2. ***ACS Omega***, volume 7(24), pages 21086–21101. ACS Publications, 2022, **( Impact Factor:4.132 )**.

2022 N. Ghosh, I. Saha, and **N Sharma**. Palindromic target site identification in sars-cov-2, mers-cov and sars-cov-1 by adopting crispr-cas technique. ***Gene***, volume 818, page 146136. Elsevier, 2022, **( Impact Factor:3.913 )**.

2022 N. Ghosh, I. Saha, S. Nandi, and **N Sharma**. Characterisation of sars-cov-2 clades based on signature snps unveils continuous evolution. ***Methods***, volume 203, pages 282–296. Elsevier, 2022, **( Impact Factor:4.647 )**.

2021 **N Sharma**, S. Gupta, Gupta M., and Chandra S. Transfer learning-based attention gated siamese network for human and sars-cov-2 protein interactions. ***Current Trends in Biotechnology and Pharmacy***, volume 15(6), pages 80–82. Association of Biotechnology and Pharmacy, 2021.

2021 Saha, I. and Ghosh, N. and Pradhan, A. and **N Sharma** and Maity, D., and Mitra, K. Whole genome analysis of more than 10 000 sars-cov-2 virus unveils global genetic diversity and target region of nsp6. ***Briefings in Bioinformatics***, volume 22, pages 1106–1121. Oxford, 2021, **( Impact Factor:11.622 )**.

2021 I. Saha, N. Ghosh, **N Sharma**, and S. Nandi. Hotspot mutations in sars-cov-2. ***Frontiers in Genetics***, volume 12, page 753440. Frontiers Media, 2021, **( Impact Factor:4.772 )**.

2021    Ghosh, N. and Saha, I. and **N Sharma** and Saha, S. Genome-wide analysis of indian sars-cov-2 genomes to identify t-cell and b-cell epitopes from conserved regions based on immunogenicity and antigenicity. ***International Immunopharmacology***, volume 91. Elsevier, 2021, **( Impact Factor:4.932 )**.

2021    N. Ghosh, **N Sharma**, and I. Saha. Immunogenicity and antigenicity based t-cell and b-cell epitopes identification from conserved regions of 10664 sars-cov-2 genomes. ***Infections, Genetics and Evolution***, volume 92, page 104823. Elsevier, 2021, **( Impact Factor:3.342 )**.

2021    N. Ghosh, I. Saha, **N Sharma**, S. Nandi, and D. Plewczynski. Genome-wide analysis of 10664 sars-cov-2 genomes to identify virus strains in 73 countries based on single nucleotide polymorphism. ***Virus Research***, volume 298, page 198401. Elsevier, 2021, **( Impact Factor:3.303 )**.

2021    N. Ghosh, I. Saha, and **N Sharma**. Interactome of human and sars-cov-2 proteins to identify human hub proteins associated with comorbidities. ***Computers in Biology and Medicine***, volume 138, page 104889. Elsevier, 2021, **( Impact Factor:6.69 )**.

2020    I. Saha, N. Ghosh, D. Maity, **N Sharma**, JP. Sarkar, and K. Mitra. Genome-wide analysis of indian sars-cov-2 genomes for the identification of genetic mutation and snp. ***Infections, Genetics and Evolution***, volume 85, page 104457. Elsevier, 2020, **( Impact Factor:3.342 )**.

2020    I. Saha, N. Ghosh, D. Maity, **N Sharma**, and K. Mitra. Inferring the genetic variability in indian sars-cov-2 genomes using consensus of multiple sequence alignment techniques. ***Infections, Genetics and Evolution***, volume 85, page 104522. Elsevier, 2020, **( Impact Factor:3.342 )**.

### In Conference Proceedings

2022    **N Sharma**, S. Gupta, N. Ghosh, and I. Saha. Face identification and recognition of sttp participants of nitttr kolkata with the integration of feature extractor and machine learning: A comparative study. In *In Proc. of National Conference on Engineering Education (NCEE), Kolkata, India, November 2021*, page 42. NITTTR, Kolkata, 2022.

2022    S. Gupta, **N Sharma**, N. Ghosh, and I. Saha. Comparative study of deep transfer learning techniques for the detection of covid-19 using chest x-ray images. In *In Proc. of National Conference on Engineering Education (NCEE), Kolkata, India, November 2021*, page 102. NITTTR, Kolkata, 2022.

2021    A. Srivastava, **N Sharma**, S. Gupta, and S. Chandra. Residual dense u-net for segmentation of lung ct images infected with covid-19. In *International Advanced Computing Conference, 2021*, pages 17–30. Springer, 2021.

2021    P. Arora, **N Sharma**, P. Bhatt, and A. Saxena. Skin lesion segmentation using deep convolutional networks. In *Concepts and Real-Time Applications of Deep Learning, 2021*, pages 111–122. Springer, 2021.

## Awards & Recognition

2022    In silico research on SARS-CoV-2 virus has been recognized by the funding agency, Science and Engineering Research Board (SERB), Govt. of India and subsequently highlighted by the Press Information Bureau, Govt. of India. This is also published in newspapers like The Times of India, The Economic Times, DNA few other newspapers.

2021    Receipt of ***ISMRM magna cum laude*** for the abstract "Can Tumor T1 Serve as Early Response Imaging Biomarker for Neoadjuvant Chemotherapy in Osteosarcoma? A Preliminary Study" presented in ISMRM 2020 international conference ***The International Society for Magnetic Resonance in Medicine, 2020***

## Position of Responsibility

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| 2021-present | **Reviewer for Computers in Biology and Medicines**, Elsevier. |
| 2022-present | **Reviewer for Scientific Reports**, Nature Publications. |
| 2022-present | **Reviewer for BMC Bioinformatics**, Springer Nature. |
| 2022-present | **Reviewer for BMC Genomics**, Springer Nature. |

## Profile Pages

*Google Scholar*.