Nisha Chaudhary

PhD SCHOLAR · JAMIA MILLIA ISLAMIA, MCARS DEPT

NEW DELHI, INDIA, 110025

+91 9891187272 | nisha152810@st.jmi.ac.in | @Nisha9293

Education

Jamia Millia Islamia — *New Delhi, IN*
PhD Computational Biology (Awaiting) — *2017 - 2024*
Advisor: Dr. Tanveer Ahmad

Jamia Millia Islamia — *New Delhi, IN*
M.Sc. Bioinformatics — *2015 - 2017*

Maharshi Dayanand University — *Haryana, IN*
B.Sc. (Hons) Zoology — *2012 - 2015*

Research Experience

MicroCRISPR Pvt. Ltd — *New Delhi, IN*
Research & Development, AI ML Unit — *At present*
- Manager

Jamia Millia Islamia — *New Delhi, IN*
Advisor: Dr. Tanveer Ahmad — *2018-2024*
- Ph.D. Scholar
  Artificial intelligence based oral cancer diagnosis and prognosis using digital pathology images

Jamia Hamdard — *New Delhi, IN*
Advisor: Dr. Mymoona Akhtar — *2017 (six months)*
- Studentship, DBT-funded Bioinformatics Centre (BIC)
  Pharmacophore mapping of newly patented antimalarial agents and virtual screening of database(s) opt in newer antimalarial agents

Jamia Millia Islamia — *New Delhi, IN*
Advisor: Dr. Mohammad Husain — *2016 (one month)*
- Summer intern, Centre for Innovation and Entrepreneurship
  In-silico Designing of Anticancer Drug for MMPs family

Publications

* first author

- **Chaudhary N***, Rai A, Rao AM, Faizan MI, Augustine J, Chaurasia A, Mishra D, Chandra A, Chauhan V, Ahmad T. High-resolution AI image dataset for diagnosing oral submucous fibrosis and squamous cell carcinoma. Scientific Data. 2024 Sep 27;11(1):1050.

- Sagar S*, Faizan MI, **Chaudhary N**, Singh V, Singh P, Gheware A, Sharma K, Azmi I, Singh VP, Kharya G, Mabalirajan U. Obesity impairs cardiolipin-dependent mitophagy and therapeutic intercellular mitochondrial transfer ability of mesenchymal stem cells. Cell Death & Disease. 2023 May 13;14(5):324.

- Faizan MI*, Chaudhuri R, Sagar S, Albogami S, **Chaudhary N**, Azmi I, Akhtar A, Ali SM, Kumar R, Iqbal J, Joshi MC. NSP4 and ORF9B of SARS-CoV-2 induce pro-inflammatory mitochondrial DNA release in inner membrane-derived vesicles. Cells. 2022 Sep 23;11(19):2969.

- Ahmad T*, Vullhorst D, Chaudhuri R, Guardia CM, **Chaudhary N**, Karavanova I, Bonifacino JS, Buonanno A.

Transcytosis and trans-synaptic retention by postsynaptic ErbB4 underlie axonal accumulation of NRG3. Journal of Cell Biology. 2022 May 17;221(7):e202110167.

- Azmi I*, Faizan MI, Kumar R, Raj Yadav S, **Chaudhary N**, Kumar Singh D, Butola R, Ganotra A, Datt Joshi G, Deep Jhingan G, Iqbal J. A saliva-based RNA extraction-free workflow integrated with Cas13a for SARS-CoV-2 detection. Frontiers in cellular and infection microbiology. 2021 Mar 16;11:632646.

- Sagar S*, Kapoor H, **Chaudhary N**, Roy SS. Cellular and mitochondrial calcium communication in obstructive lung disorders. Mitochondrion. 2021 May 1;58:184-99.

Working manuscript

- **Chaudhary N***, Muddemanavar P, Rai A, Faizan MI, Augustine J, Chaurasia A, Mishra D, Chandra A, Ahmad T. Medically applicable multimodal system for predicting OSMF and OSCC via WSI. (***under preparation***)

Patents

- Ahmad T, **Chaudhary N**. An artificial intelligence-based system for prognosis and stage-specific diagnosis of oral cancer. ***Provisional Indian Patent 202211005720***. February 2022.
- **Chaudhary N**, Ahmad T, Chaurasia A, Rai A, Mishra D. System and method for genomic markers and digital pathology image-based prediction of oral malignant disorders. ***GOI Indian Patent 202311016784***. December 2024.

Selected presentations

- **Grade-level classification of oral squamous cell carcinoma (OSCC) from digital pathology using ensemble deep learning algorithms.** Oral presentation, 15th RECOMB satellite workshop in Computational Cancer Biology, Istanbul, Turkey (2023)
- **An artificial intelligence based oral cancer diagnosis system.** Poster presentation, The role of AI in transforming healthcare, Jointly organized by THSTI-Faridabad and Oxford University, UK (2022)
- **Histology image based diagnostic tool for Oral Submucous Fibrosis (OSMF).** Oral presentation, BIOPHYSIKA, Jamia Millia Islamia, New Delhi, India (2019)

Skills

Technical Skills

- Proficient in designing and implementing deep learning models, including Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), and Generative Adversarial Networks (GANs), tailored for complex image classification tasks.
- Extensive experience with deep learning frameworks and libraries such as TensorFlow, PyTorch, and Keras, leveraging their capabilities to build, train, and deploy scalable models.
- Image Processing: digital pathology image analysis, including preprocessing, augmentation, and feature extraction techniques.
- Programming Languages: Python and R.
- Software: Fiji/ImageJ, visual studio code, pathomation.
- Data Analysis: Skills in data cleaning, normalization, statistical analysis, and visualization tools (e.g., pandas, NumPy, Matplotlib, Seaborn).

Research Skills

- Experimental Design and Literature Review
- Data Collection and Management
- Publication, Presentation, and Grant Writing

Soft Skills

- Critical Thinking, Teamwork and Collaboration, Leadership, and Time Management

REFERENCES

- Tanveer Ahmad, Assistant Professor, MCARS, Jamia Millia Islamia. (tahmad7@jmi.ac.in)
- Akhilanand Chaurasia, Associate Professor, Oral Medicine and Radiology, KGMU, Lucknow. (chaurasiaakhilanand49@gmail.com)
- Augustine Jeyaseelan, Professor, Maulana Azad Institute of Dental Science, New Delhi. (augustinejeya@gmail.com)