

Ambuj Kumar

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Education History

Doctor of Philosophy (Ph.D) in Digital Health (PMRF)

Institution: Indian Institute of Technology Bombay

Enrolled in: August 2023

Ongoing Project: Single-cell Cross-species Characterization of Cortical Cis-regulatory Landscape

Master of Technology in Medical Biotechnology

Institution: Indian Institute of Technology Hyderabad **GPA:** 9.12

Year of Graduation: June 2023

Thesis: MyeloDB: a multi-omics resource for multiple myeloma

Advisor: Dr. Rahul Kumar, Assistant Professor, IIT Hyderabad

Bachelor of Technology in Biotechnology

Institution: Noida Institute of Engineering & Technology, Greater Noida **GPA:** 8.91

Year of Graduation: June 2021

Thesis: Investigation of inhibitory potential of bioactive compounds of *Allium sativum* and *Allium cepa* against COVID-19: Molecular Docking Approach

Advisor: Dr. Fahad Khan, Assistant Professor, NIET, Greater Noida

Awards / Accomplishments

- Poster Prize — *Advances in Genomics & Transcriptomics* Conference, IIT Bombay (2025)
- Prime Minister Research Fellowship (PMRF), Ministry of Education, Govt. of India (2023–present)
- Research Appreciation Award — Master's Thesis, IIT Hyderabad (2023)
- Qualified GATE-BT, All-India Rank 508 (2021)
- Summer Research Fellowship Program (SRFP), INSA-IASc-NASI, IISc Bengaluru (2020)
- 3rd Prize — Poster Presentation, Sharda University (2020)
- 2nd Prize — Poster Presentation, Noida Institute of Engineering & Technology (2019)

Computational Skills

Languages & Tools: Python, R, Linux, basic SQL, Git, HTML/CSS

Data Analysis: Bulk/Single cell multi-omics (scRNA-seq, scATAC-seq)

Database & Web: Basic database design (MySQL), creating and maintaining web resources

Wet-Lab Skills

Core Techniques: PCR, Cloning, Gel electrophoresis, Western blot, UV Vis quantification

Internships & Work Experience

Teaching Assistant (PMRF), NITTE University, Bengaluru (NMIT) Jan 2023 – Present

- **Mathematics for Biologists** — Jan 2025 – Present
- **Fundamentals of Web Design & Development; Linux & GitHub** — Jul 2024 – Oct 2024
- **Introduction to Machine Learning** — Jan 2023 – Apr 2024

Teaching Assistant, Indian Institute of Technology Hyderabad Aug 2021 – Jun 2023

- Conducted practical sessions for “Big Data Biology and Biological Databases”

Summer Research Fellow, Indian Institute of Science (IISc), Bengaluru

Nov 2020 – Jan 2021

- Project title: Construction of *RAD51D* shRNA-resistant plasmid
- Supervisor: Prof. Ganesh Nagaraju, Dept. of Biochemistry

CSIR-Summer Research Training Program (Online)

Jun 2020 – Aug 2021

- Title: Nutraceuticals and Functional Food
- Supervisor: Prof. Debashis Dutta

Research Publications

- Vinod Kumar, K., **Kumar, A.**, Kundal, K., Sengupta, A., Singh, S., Korra, B. T., ... Kumar, R. (2024). AMLdb: a comprehensive multi-omics platform to identify biomarkers and drug targets for acute myeloid leukemia. *Briefings in Functional Genomics*, 23(6), 798-805.
- Kunjulakshmi, R., **Kumar, A.**, Kumar, K. V., Sengupta, A., Kundal, K., Sharma, S., *et al.* (2024). AgingBase: a comprehensive database of anti-aging peptides. *Database: The Journal of Biological Databases and Curation*, 2024.
- **Kumar, A.**, Kumar, K. V., Kundal, K., Sengupta, A., Sharma, S., & Kumar, R. (2024). MyeloDB: A multi-omics resource for Multiple Myeloma. *Functional & Integrative Genomics*, 24(1), 17.
- Viswanathan, A., Kundal, K., Sengupta, A., **Kumar, A.**, Kumar, K. V., Holmes, A. B., & Kumar, R. (2022). Deep learning-based classifier of diffuse large B-cell lymphoma cell-of-origin with clinical outcome. *Briefings in Functional Genomics*.
- Khan, F., Pandey, P., Mishra, R., Arif, M., **Kumar, A.**, Jafri, A., & Mazumder, R. (2021). Elucidation of S-allylcysteine role in inducing apoptosis by inhibiting PD-L1 expression in human lung cancer cells. *Anti-Cancer Agents in Medicinal Chemistry*, 21(4), 532-541.
- Pandey, P., Khan, F., **Kumar, A.**, Srivastava, A., & Jha, N. K. (2021). Screening of potent inhibitors against 2019 novel coronavirus (Covid-19) from *Allium sativum* and *Allium cepa*: An in silico approach. *Biointerface Res Appl Chem*, 11(1), 7981-7993.

Book Chapters

- **Kumar, A.**, Kumar, K. V., Kundal, K., Sengupta, A., Kumar, R. (2024). Advancement of in silico tools for stem cell research. In *Computational Biology for Stem Cell Research* (pp. 3-16). Academic Press.