UNIVERSITY OF DELHI

Certificate Course

on

Applications of Artificial Intelligence in Health Sciences

2nd BATCH
STARTING
SEPTEMBER 2026

Enroll Now Before the Batch Fills Up

⏱️ 15-Week Program | 60 Learning Hours

🎯 Level: Basic | 🌐 Mode: Online

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Professor Yogesh Singh
Vice Chancellor
University of Delhi

Professor Balaram Pani
Dean of Colleges
University of Delhi

Professor Rajni Abbi
Director South Campus
University of Delhi

Professor Payal Mago
Director, Campus of Open Learning
University of Delhi

Dr. Vikas Gupta
Registrar
University of Delhi

Professor K. Ratnabali
Dean, Academic Affairs
University of Delhi

Girish Ranjan
Finance Officer
University of Delhi

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Prof. Dinabandhu Sahoo
Chairperson
Research, Innovation and Entrepreneurship Council
University of Delhi, Institute of Bioresource and Sustainable Development

Prof. Daman Saluja
Course Director
Honorary Professor, Delhi School of Public Health (DSPH), Institution of Eminence (IoE), University of Delhi

Prof. Naveen Kumar
Course Joint Director
Senior Professor, Department of Computer Science, University of Delhi

Dr. Ankit Rajpal
Course Coordinator
Associate Professor, Cluster Innovation Centre, University of Delhi

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Eligibility Criteria

Bachelor's Degree from a recognized University, at least equivalent to National Higher Education Qualifications Framework (NHEQF) Level 5.5, with recommended basic proficiency in Mathematics. The degree must be earned in any one of the following disciplines:

- **Computer Science/ Information Technology**
- **Engineering**
- **Mathematics / Statistics**
- **Biotechnology**
- **Bioinformatics**
- **Medicine (MBBS), Nursing, Pharmacy, Scientist, Teachers**
- **All areas of Life Sciences/ Pharmacy**

Applicability of the Course

The course is highly applicable to students and professionals seeking to bridge computational techniques with real-world health challenges. With a focus on diagnostics, prognosis, imaging, drug discovery, and clinical NLP, the course prepares learners to get hands-on with multi-source healthcare data such as EHR, medical images, genomic profiles, and clinical text. It offers practical training in state-of-the-art AI frameworks, deep learning models, and bioinformatics tools, enabling participants to develop, evaluate, and interpret medical AI systems responsibly. The interdisciplinary design makes it suitable for graduates from Computer Science, Engineering, Life Sciences (all branches) , Medicine, and related fields, empowering them to contribute to evidence-based clinical decision support, personalized medicine, and innovative digital health solutions. Learners also gain insights into the ethical, regulatory, and societal considerations that are critical to the safe deployment of AI in healthcare settings.

Course Objectives

This course aims to provide a comprehensive introduction to the applications of Artificial Intelligence in health sciences. It equips students with the skills to handle diverse healthcare data, build and evaluate AI models for diagnostics, prognosis, imaging, drug discovery, and clinical NLP. The course also emphasizes ethical, regulatory, and interpretability aspects of AI in healthcare, fostering interdisciplinary problem-solving and responsible innovation.

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Modules

- **Module 1: Introduction to AI in Healthcare**
- **Module 2: Introduction to Bioinformatics and Multi-Omics**
- **Module 3: Machine Learning Foundations in Medical Sciences**
- **Module 4: Medical Imaging and Data Handling**
- **Module 5: Deep Learning and CNNs for Medical Image Analysis**
- **Module 6: AI in Drug Discovery and Cheminformatics**
- **Module 7: Natural Language Processing in Healthcare**
- **Module 8: Ethics, Regulation, and Future of AI in Medicine**

Each Module will be augmented with hands on training appropriate through tools

Assessment Method

Continuous evaluation through:
1. MCQ tests and assignments on completion of each module by the instructor (to be submitted to the Course coordinator)
2. Seminar presentations, etc.

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Teaching Learning Outcomes

On completing this course, the students will be able to:

- Identify and describe the role, opportunities, and limitations of AI in various healthcare applications (diagnostics, prognosis, image analysis, drug discovery, NLP).
- Acquire, preprocess, and integrate multi-source healthcare data, including structured (EHR), unstructured (text), imaging, and genomic datasets.
- Apply machine learning and deep learning techniques for classification, regression, segmentation, and survival analysis tasks on medical datasets.
- Develop and evaluate medical AI models using frameworks like Scikit-learn, TensorFlow, PyTorch, BioBERT, and DeepChem with appropriate performance metrics.
- Design end-to-end pipelines for medical image analysis using CNNs, U-Net, and transfer learning approaches.
- Use AI tools in bioinformatics, such as Cytoscape, STRING, and pathway analysis tools, to identify key biomarkers and disease pathways.
- Implement natural language processing (NLP) pipelines for EHR mining, clinical decision support, and chatbot development using domain-specific models like BioBERT.
- Assess AI models for ethical compliance, explainability, and fairness, using interpretability tools like SHAP, LIME, and fairness metrics.
- Critically analyze legal, regulatory, and societal implications of AI in clinical decision-making, ensuring adherence to HIPAA/GDPR and other frameworks.
- Collaborate effectively across medical and computational disciplines, integrating AI techniques with domain-specific knowledge in health sciences.

Modalities of the Course

- The course is in online mode.
- The course fee is Rs 10000/- per student. A discount of 25% for the presently enrolled student of the University of Delhi.
- The course duration is 15 weeks.
- The classes will be 2 hours each on Saturday and Sunday.
- The assessment method is continuous evaluation by taking MCQs and assignments and/or quizzes/viva, problem-solving exercises, and/or Seminar Presentations, etc

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Important Dates

ANNOUNCEMENT OF THE COURSE	**05th August, 2026**
LAST DATE OF APPLICATION	**23rd August, 2026**
DECLARATION OF THE 1ST LIST	**27th August, 2026**
FEE SUBMISSION 1ST LIST	**27th August 2026 - 31st August, 2026**
DECLARATION OF THE 2ND LIST	**03rd September, 2026**
FEE SUBMISSION 2ND LIST	**03rd September, 2026 - 07th September, 2026**
INAUGURATION OF COURSE & COMMENCEMENT OF CLASSES	**12th September, 2026 onwards**

The detailed time schedule will be sent to selected candidates.

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Teaching Learning Plan

Unit	Title	No. of Weeks
I	Introduction to AI in Healthcare	1
II	Introduction to Bioinformatics and Multi-Omics	2
III	Machine Learning Foundations in Medical Sciences	2
IV	Medical Imaging and Data Handling	2
V	Deep Learning and CNNs for Medical Image Analysis	2
VI	AI in Drug Discovery and Cheminformatics	2
VII	Natural Language Processing in Healthcare	2
VIII	Ethics, Regulation, and Future of AI in Medicine	2

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FACULTY PROFILE

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Senior Professor,
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University of Delhi

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Prof. Sanjeev Singh
Dean, Faculty of Technology, Director, Computer Center

Dr. Virendra Kumar
Professor,
Department of NMR
All India Institute of Medical Sciences
New Delhi

Dr. Bapu Koundinya Desiraju M.B.B.S., Ph.D.
Principal Scientist-I
BRIC - Translational Health Science and Technology Institute

Prof. Shandar Ahmad
School of Computational and Integrative Sciences, Jawaharlal Nehru University, New Delhi

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FACULTY PROFILE

Prof. Madhu Chopra
Professor, Dr B R Ambedkar Center for Biomedical Research (ACBR)

Prof. Areejit Samal
Professor, The Institute of Mathematical Sciences (IMSc), Chennai

Prof. Rahul Siddharthan
Professor, The Institute of Mathematical Sciences, Chennai

Prof. Huiru (Jane) Zheng
Professor, School of Computing and Mathematics, Ulster University, UK

Prof. Devasenathipathy Kandasamy
Doctor of Medicine, AIIMS, NEW DELHI

Prof. Sonika Bhatnagar
Department of Biological Sciences and Engineering, NSUT, Delhi

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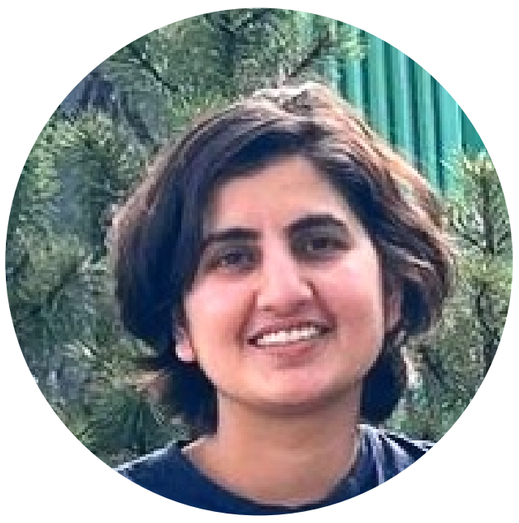
FACULTY PROFILE

Prof. Yasha Hasija
Professor and Head, Department of Biotechnology, Delhi Technological University

Dr. Dilip Senapati
Associate Professor, Department of Computer Science, University of Delhi

Dr. Ankit Rajpal
Associate Professor, Cluster Innovation Centre, University of Delhi

Dr. Unmesh Shukla
Assistant Professor, Department of Computer Science and Engineering, Faculty of Technology, University of Delhi



Dr. Sangeeta Yadav
Assistant Professor, Department of Computer Science and Engineering, Faculty of Technology, University of Delhi

Dr. Abhishek Subramanian,
Assistant Professor, Indian Institute of Technology Hyderabad (IITH)

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FACULTY PROFILE

Dr. Ashwini Kumar Ray
Assistant Professor, Department of Environmental Studies, University of Delhi

Dr. Amar Ranjan
Assistant Professor, Lab Oncology, Cancer Institute, AIIMS, NEW DELHI

Dr. Varun Surya
MDS-Professor (Assistant), AIIMS, NEW DELHI

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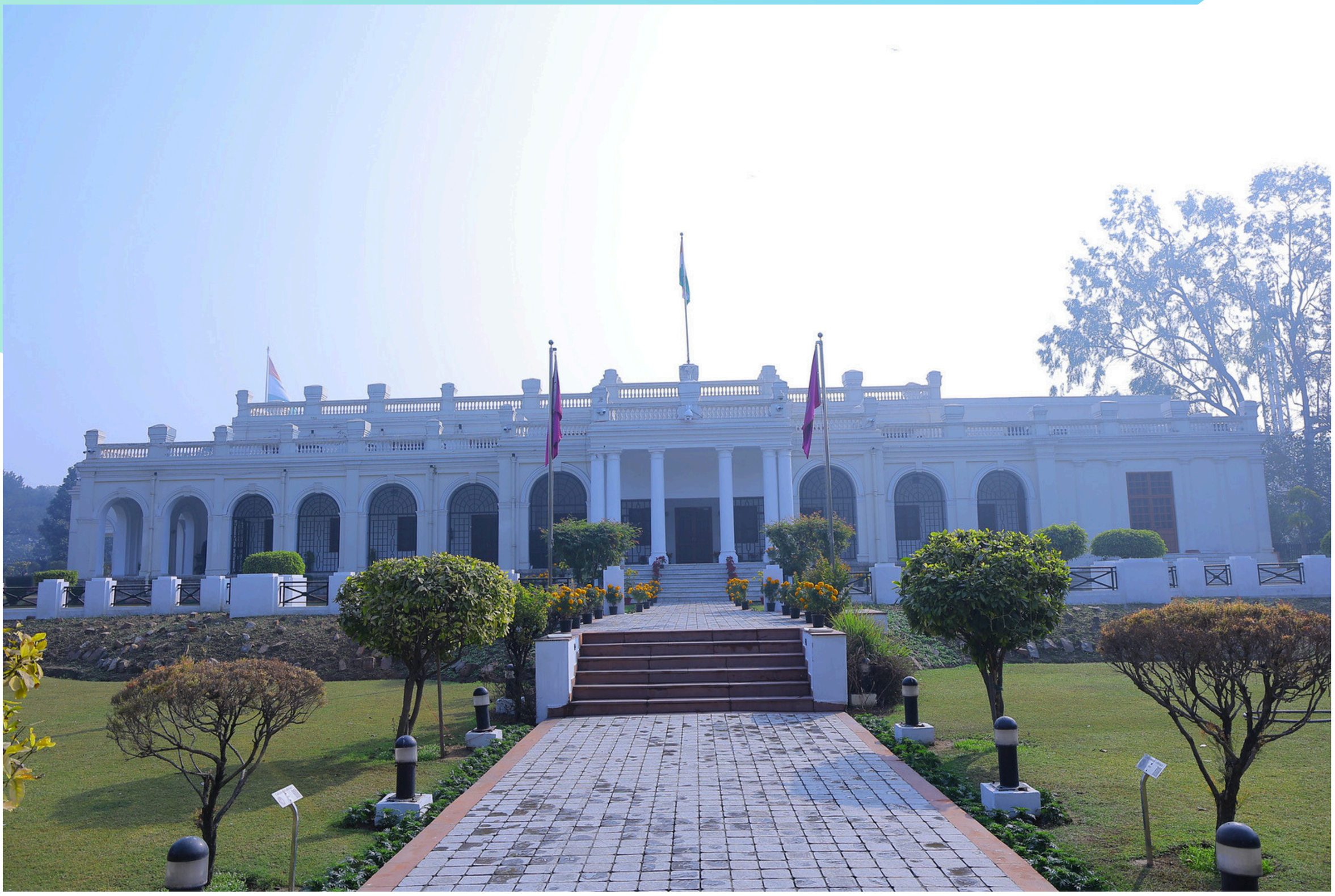


Email ID: aahs.rc@admin.du.ac.in

Website: https://aahs.rc.du.ac.in

Apply here:

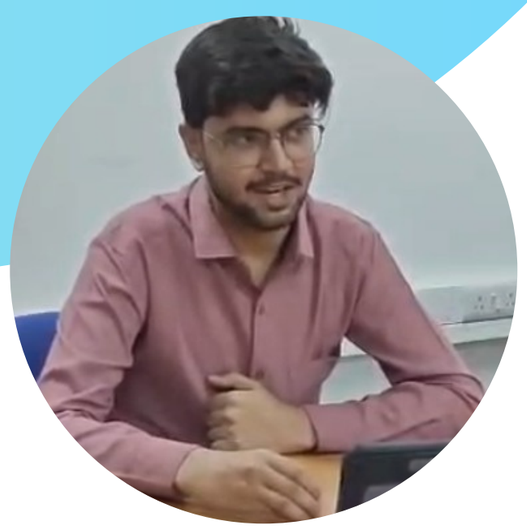
https://forms.gle/kpMpsj8127wLcpna6

Register Now

TESTIMONIALS

"Looking forward for collaboration with the organizers also, I am very thankfull to organizers to organize such a beautiful course which includes every aspect required in healthcare"

"The course structure helped me understand how AI integrates into healthcare and how it can be used to optimize outcomes for different patient groups"



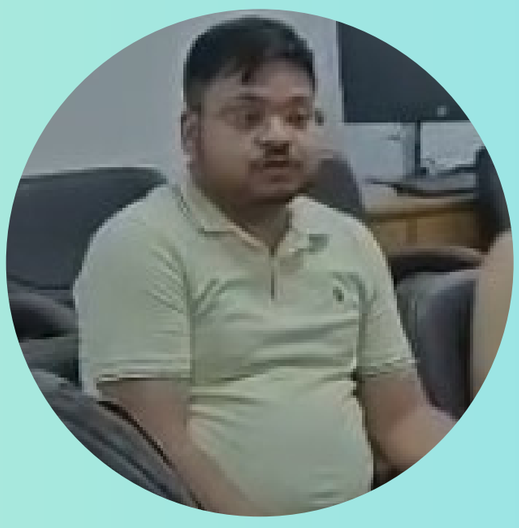
"I believe this course will gain greater value over time. Unlike general AI courses, it covered not only AI concepts but also the working of medical technologies like DNA sampling, MRI, and X-ray imaging"

"Beyond machine learning and deep learning, this course taught me their practical applications in healthcare and the models used in the domain"

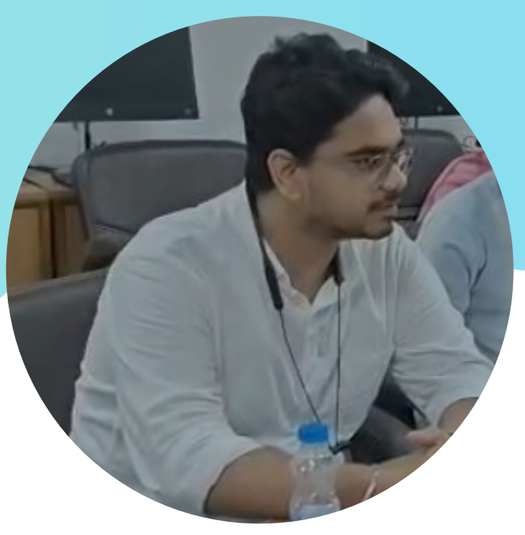
"I am from naturopathy, I got an initial point to use AI for better patient diagnosis by this course. I learnt python and AI from this course"

"I was able to follow the content easily and i am now planning to utilize it in my research work"

TESTIMONIALS



"Unlike other courses that teach either Python or health sciences, this course integrated both, making it highly relevant to my research.”



"The early sessions on gene expression and biomarker discovery were highly valuable and significantly supported my research"

"By using AI i will be using tools for understanding the processes going on the surface of liquid droplet and design algorithms"