About the institute

The institute is located in 47 acres of green campus at Andheri (W), the fastest-growing suburb of Mumbai. The campus also houses four Bhavan's Institutions of great repute namely Bhavan's College (the arts, commerce and science college), Sardar Patel College of Engineering – Government aided Engineering College, S.P. Jain Institute of Management and Research, a management institute and A.H. Wadia, higher secondary school. In 1957, the Bharatiya Vidya Bhavan conceived the idea of establishing an engineering college in Mumbai. Sardar Patel College of Engineering was inaugurated on 19th August 1962. In 1995 self-financed engineering courses were added to it and it functioned as Sardar Patel College of Engineering (Unaided-wing) conducting Electronics Engineering, Computer Engineering and Information Technology Courses and Masters course in Electronics from 2005 till 2008. These courses have earned a great reputation in the field of engineering education, as well as industry. Bharatiya Vidya Bhavan's Sardar Patel College of Engineering, Unaided Wing was established in its new building under the name and style of Bharatiya Vidya Bhavan's Sardar Patel Institute of Technology in 2005 and is affiliated to Mumbai University.

About the Department

The Department of Computer Science and Engineering was established in the year 2021 introducing two new UG Programs - B.Tech in CSE [AIML] and B.Tech in CSE [Data Science] with the aim of providing students with the necessary skills to excel in the rapidly evolving tech industry. From 2023, the two programs are merged and the course offered is B.Tech in CSE. The department consists of 14+ faculty members, 3 technical assistants and more than 220 students working towards their Bachelors', Masters and Doctoral degrees. The department attracts high-quality students from all over Maharashtra and also from the country. In the recent past, we have benchmarked our curriculum with select institutions of higher learning around the world and currently, we are carefully reviewing the impact of these consequent changes with a view to making our programs even more strong and competitive. The department also attracts interaction with the IT industries to provide training to the students. Graduates from this department will have a deep understanding of both the theoretical and practical aspects of computer science and engineering. They will be well equipped with a broad range of skills that can be applied in many industries, including tech, finance, healthcare, transportation, entertainment, etc. The department offers a comprehensive curriculum that includes both theoretical and practical courses, making it a highly sought-after field of study. The department's graduates have a wide range of career opportunities in various industries, and their skills are essential to the development of new technologies that drive innovation.

SPONSORED BY AICTE TRAINING AND LEARNING (ATAL) ACADEMY.
ONE WEEK OFFLINE FACULTY DEVELOPMENT PROGRAM ON

"From Data to Impact: AI in Healthcare and Agriculture"

09th – 14th DECEMBER 2024

Programme Coordinator:
Dr. D. R. Kalbande
Professor, S.P.I.T.
Programme Co-coordinator:
Dr. Renuka Pawar
Assistant Professor, S.P.I.T

ORGANIZED BY

COMPUTER SCIENCE AND ENGINEERING DEPARTMENT
IN ASSOCIATION WITH IDEALab SPIT
Sardar Patel Institute of Technology
Munshi Nagar, Andheri (W),
Mumbai 400 058

ⓘ About the course

The Faculty Development Program "From Data to Impact: AI in Healthcare and Agriculture" is designed to empower educators with the knowledge and skills necessary to integrate cutting-edge AI technologies into their teaching curriculum. Through a series of interactive workshops and hands-on sessions, participants will gain insights into the latest advancements in AI applications specific to healthcare and agriculture sectors. The program emphasizes practical implementation, equipping faculty members with the technical expertise needed to teach AI concepts effectively. By fostering collaboration and providing access to resources, the program aims to cultivate a community of educators capable of preparing the next generation of professionals to tackle real-world challenges in these critical domains.

About A.I. in Healthcare

AI in healthcare is revolutionizing the industry by augmenting human capabilities and transforming the way medical professionals diagnose, treat, and manage patient care. Through advanced algorithms and machine learning techniques, AI can analyze vast amounts of medical data, ranging from patient records to genomic information, to uncover patterns and insights that were previously undetectable. From personalized treatment recommendations to early disease detection and predictive analytics, AI enables healthcare providers to deliver more accurate and timely interventions, ultimately improving patient outcomes. Additionally, AI-powered technologies such as medical imaging analysis and natural language processing enhance diagnostic accuracy and streamline administrative processes, leading to increased efficiency and reduced healthcare costs. As AI continues to evolve, its potential to revolutionize healthcare delivery and positively impact global health outcomes is undeniable.

About A.I. in Agriculture

AI is revolutionizing agriculture by offering innovative solutions to enhance productivity, sustainability, and efficiency in farming practices. Through the analysis of vast amounts of data collected from sensors, drones, and satellite imagery, AI algorithms can provide valuable insights into crop health, soil conditions, and weather patterns. Machine learning models can optimise planting strategies, predict crop yields, and detect diseases or pests early, enabling farmers to make data-driven decisions and mitigate risks. Additionally, AI-powered robots and autonomous vehicles are transforming traditional farming tasks, such as planting, weeding, and harvesting, leading to increased automation and labour efficiency. Overall, AI holds tremendous promise in revolutionising agriculture, enabling farmers to produce more food sustainably while minimizing environmental impact.

Who should attend?

The faculty members of the AICTE-approved institutions, research scholars, PG students, participants from the Government, Industry and staff of the host institution.

Register at

https://atalacademy.aicte-india.org/signup

FDP Id-1715334799

Contact Persons for Registrations:

Prof. Renuka Pawar
renuka_pawar@spit.ac.in
9833928631

Organizing committee

Prof. Sheetal Chaudhari
Prof. Harshil Kanakia
Prof. Sakina Salmani
Prof. Suhas Kakade
Prof. Vipul Kushwaha
Dr. Sanjuktarani Jena

Course Objectives

1. Enhance Understanding of AI Fundamentals: Provide a comprehensive understanding of artificial intelligence (AI), machine learning (ML), and deep learning concepts relevant to healthcare and agriculture.
2. Foster Awareness of AI Applications: Familiarization with real-world applications of AI in healthcare and precision agriculture
3. Equip with Practical Skills: to acquire hands-on experience in data collection, preprocessing, machine learning model development, and deployment.
4. Empower Curriculum Development: Provide strategies and resources for integrating AI concepts and practical experiences into existing curricula.
5. Facilitate Effective Assessment: Assessment methods and tools to evaluate students' understanding of AI concepts and their ability to apply them in healthcare and agriculture.

Expected Outcomes

After Attending one week of FDP, participants will be able to

1. Deepened Understanding of AI: Participants will gain a deeper understanding of AI fundamentals and its applications, enabling them to convey these concepts to students effectively.
2. Enhanced Pedagogical Skills: Faculty members will acquire the pedagogical skills necessary to design and deliver AI-focused courses, incorporating hands-on activities and real-world case studies.
3. Improved Curriculum Integration: seamless integration of AI into existing curricula.
4. Strengthened Assessment Practices: Through the exploration of assessment methods, faculty will enhance their ability to evaluate students' comprehension and application of AI concepts effectively.
5. Preparedness for Industry Demands: The faculty will prepare the students for careers in these rapidly evolving fields.

Programme Schedule:

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
9:00 - 9:30 Inauguration					
9:30 - 12:00 **Session 1** 1. Name of the Expert: Dr. Bhalchandra Chaudhari 2. Designation: Principal 3. Organization: SPIT, Mumbai 4. Experience in Years:36 5. Topic-Indian Knowledge System	9:30 - 12:00 **Session 3** 1. Name of the Expert: Dr. Surendra Rathod 2. Designation: Principal 3. Organization: FRCRC, Mumbai 4. Experience in Years:24 5. Topic to be taught: Artificial intelligence in Ancient India	9:30 - 12:00 **Session 5** 1. Name of the Expert: Dr.Prashant Bartakke 2. Designation: Associate Professor 3. Organization: COEP, Technological University 4. Experience in Years: 14 5. Topic to be taught: Importance of data preprocessing and learning relevant techniques	9:30 - 12:00 **Session 7** 1. Name of the Expert: Dr. Mayank Agrawal 2. Designation: Assistant Professor 3. Organization: IIIT, Patna 4. Experience in Years:10 5. Topic to be taught: Ensemble methods, deep learning, and reinforcement learning	9:00 - 1:00 Industrial visit Name of the Organization: AICTE IDEALab Complete address with pincode: Bharatiya Vidya Bhavans Sardar Patel Institute of Technology Munshi Nagar, Andheri (West), Mumbai 400 058Industry Type: Research Area of specification: AI, IoT, and cutting-edge technology promote startups.	9:30 - 12:00 **Session 10** 1. Name of the Expert: Dr.Shashidhar Koolagud 2.Designation: Associate Professor 3.Organization: NITK Surathkal 4.Experience in Years: 12 5. Topic to be taught: Appliccations of AI on Audio/Speech processing
12:00 - 1:00 Article Discussion	12:00 - 1:00 Article Discussion	12:00 - 1:00 Article Discussion	12:00 - 1:00 Article Discussion		12:00 - 1:00 Reflection Journal
1:00 - 2:00 Lunch	1:00 - 2:00 Lunch	1:00 - 2:00 Lunch	1:00 - 2:00 Lunch	1:00 - 2:00 Lunch	1:00 - 2:00 Lunch
2:00 - 4:30 **Session 2** 1. Name of the Expert: Dr. Joe Ninan 2. Designation: Reader 3. Organization: TIFR, Mumbai 4. Experience in Years: 13 5. Topic to be taught: Introduction to artificial intelligence, machine learning,and deep learning concepts	2:00 - 4:30 **Session 4** 1. Name of the Expert: Dr. Biplap Banargee 2. Designation: Associate Professor, 3. Organization: IIT-B, Mumbai 4. Experience in Years: 13 5. Topic to be taught: Various methods for collecting data in healthcare and agriculture	2:00 - 4:30 **Session 6** 1. Name of the Expert: Deepak Gupta 2. Designation: Assistant Professor Organization: Maharaja Agrasen institute of Technology, Delhi Experience in Years: 14 3. Topic to be taught: supervised and unsupervised learning algorithms suitable for healthcare and agriculture datasets.	2:00 - 4:30 **Session 8** 1. Name of the Expert: Dr. Mayank Agrawal 2. Designation: Assistant Professor 3. Organization: IIIT, Patna 4. Experience in Years:10 5. Topic to be taught: Introduction to CNN and RNN. Building and training CNNs for medical image analysis and agricultural image classification.	2:00 - 4:30 **Session 9** 1. Name of the Expert: Akshay Shah 2. Designation: AVP - Software Engineer 3. Organization: Deutsche Bank 4. Experience in Years: 5 5. Topic to be taught: Introduction to RNNs for time-series data analysis in agriculture	2:00 - 4:00 Quiz and Test Session + Discussion and Feedback
4:30 - 5:30 Hands-on training /Labs: collecting and managing diverse datasets relevant to healthcare and agriculture applications.	4:30 - 5:30 Hands-on training /Labs: experience with data preprocessing tools and libraries such as pandas and sci-kit-learn.	4:30 - 5:30 Hands-on training /Labs: on building and evaluating machine learning models using Python and relevant libraries	4:30 - 5:30 Hands-on training /Labs: on demonstrations of deep learning frameworks such as TensorFlow and PyTorch.	4:30 - 5:30 Hands-on training /Labs: Session on deploying AI models using cloud platforms.	4:00 -5:00 **Valedictory**.