IIHT

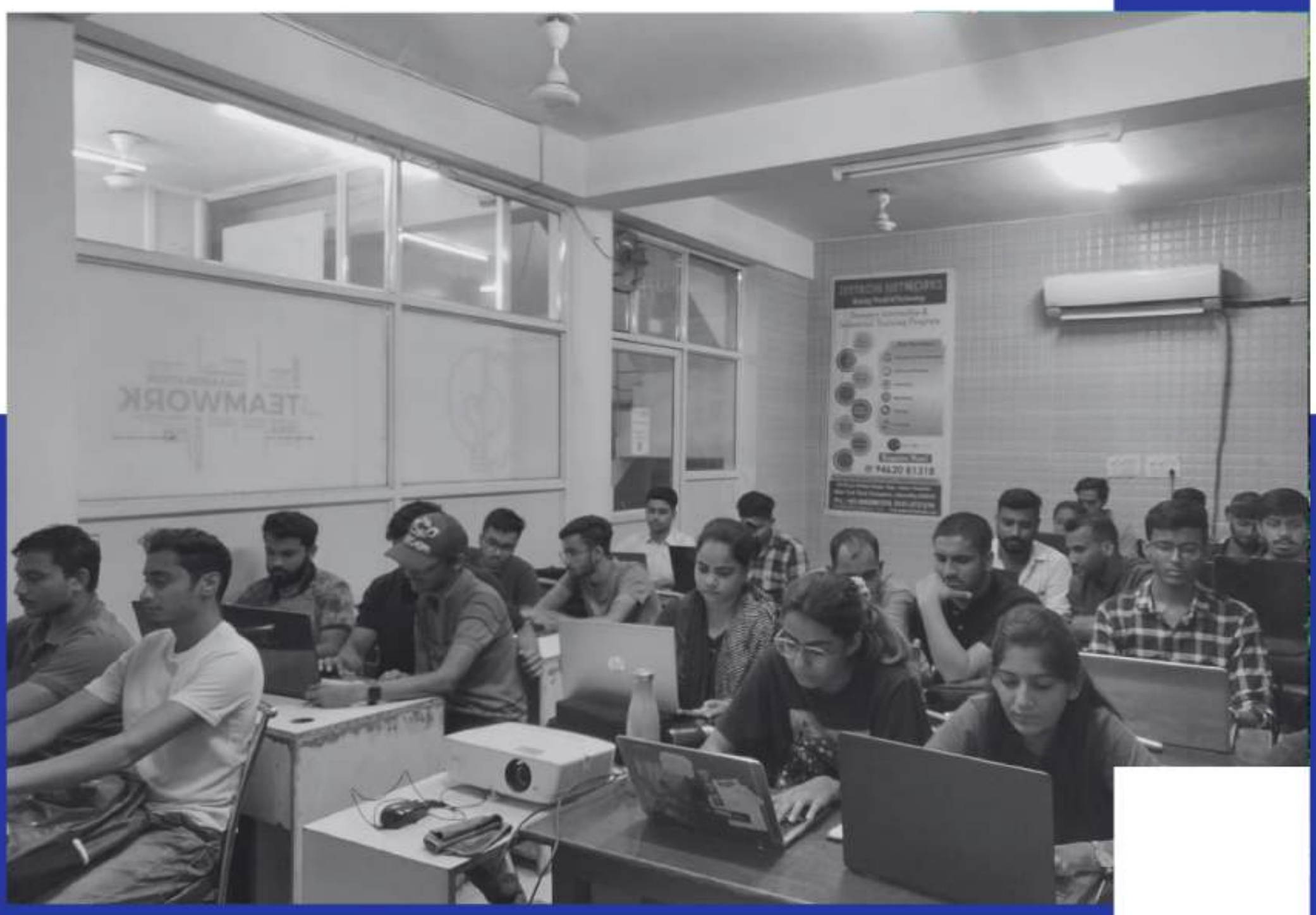
Connecting Talent to Opportunity

INTEGRATED INSTITUTE OF HARDWARE TECHNOLOGY

www.iiht.org.in

MACHINE LEARNING

60 Days Training Program



Unleash the Power of Data: Empowering Intelligent Insights with Machine Learning

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About Us

IIHT Jaipur believe that upskilling is mightier than massive layoffs. And not just us, but countless companies attest to it and have adopted this approach in their businesses as well. The domain expertise these upskilled individuals bring in is what sets them apart. We focus on nurturing these aspects. So, whether you are a student in college or a fresh graduate entering corporate, we have something for you to offer.

We are an online and offline training institution that provides students and professionals with courses in high demand. We provide training in a vast array of technologies, including Cloud Computing, DevOps, Cyber Security, Full stack development, Data Science, Digital Marketing, and Web Development, among others.

AI and machine learning, a type of AI, are making computers smarter by emulating human thought. Robotic control, data mining, autonomous navigation, and bioinformatics use computer systems that learn from experience.

You Acquire Unlimited Support

We provide you with innovative learning tools, digital study material, tutorial videos, student counsel and support, as well as discussion forums where you can interact with other students.

Your Studies Are 100% Online & Offline And Completely Flexible

Learn and study 100% online and offline at your own convenience. Full-time or part-time students at Indiana University have the option to earn their degree entirely from home.

The Optimal Mixture of Theory And Practise

Our programmes provide you with essential theoretical knowledge and place an emphasis on practice-oriented studies that will best prepare you for a future career. Thanks to our vast array of specialisations, you can specialise in the specific areas that align with your individual objectives.

Course Details

Introduction to A.I and Machine learning

- The emergence of Artificial Intelligence
- Artificial Intelligence in Practice
- Sci-fi movies with the concept of AI
- Recommendation system
- Relationship Between Artificial intelligence, Machine Learning and Data Science
- Definition and feature of Machine Learning
- Machine Learning approaches
- Machine Learning techniques
- Application of Machine Learning – Part A
- Application of Machine Learning – Part B

Exploratory Data Analysis/Descriptive Statistics

- Data Exploration: Loading csv file and excel files.
- Importing and storing Data
- The measure of Central Tendency

1. Mean
2. Median
3. Mode

- **Measure of Dispersion**

1.Range
2.Variance
3.Standard Deviation
4.Inter Quartile Range

- **EDA with Pandas Function**

1.Head
2.Tail
3.Describe
4.Dtype
5.Crosstab
6.GroupBy
7.Column
8.Info
9.Astype
10.Describe
11.Value count
12.Sorting etc.

- **EDA with Data visualization**

1.Correlation Analysis
2.Pair Plot
3.Scatter Plot
4.Joint Plot
5.Distribution Plot etc.

- **Data Preparation**
  1.Data cleaning
  2.Feature selection

Course Details

3.Data Transform
4.Feature Engineering
5.Dimensionality Reduction
(a)Introduction of Dimensionality Reduction
(b)Principal Component Analysis
(c)Steps for PCA
(d)Factor Analysis
(e)Steps for FA
(f)Difference between PCA and FA
6.Wrangling Missing Value in a Dataset
7.Missing value treatment
8.Outlier Detection
9.Outlier Treatment

Machine Learning
Section 1.

- Introduction to Machine Learning
- Machine learning Model flow
- How to treat data in ML
- Types of Machine Learning

Supervised Learning
Types of Supervised Learning
i)Regression Analysis
(1)Linear Regression
(a)Assumption of Linear Regression
(i)Linearity
(ii) Multivariate Analysis
(iii)No or little multicollinearity
(iv) Homoscedasiticity
(b)Optimization of linear regression
(i)Mean Square
(ii) RMSE
(iii)R2 Error
Practical Implementation of Linear Regression
(2)Multiple Linear Regression
(a)Assumption of Multiple Linear Regression
(i)Linearity
(ii) Multivariate Analysis
(iii)No or little multicollinearity
(iv) Homoscedasiticity
(b)Optimization of multiple linear regression
Practical implementation of multiple linear regression

(3)Polynomial Regression
(a)Assumption of Polynomial Regression
(b)Cost function of polynomial Regression
Practical Implementation of Polynomial regression

ii)Classification Analysis
(1)Logistic Regression
(a)Assumption of Logistic regression
(b)Practical Implementation of Logistic Regression
(2)KNN Algorithm
(a)Assumption of Logistic regression
(b)Practical Implementation of KNN Algorithm
(3)Support Vector Machine
(a)Assumption of Logistic regression
(b)Practical Implementation of KNN Algorithm
(4)Decision Tree Classifier
(a)Assumption of Decision Tree
(b)Decision tree formation
(c)Overfitting of Decision tree
(d)Practical Implementation of Decision tree
(5)Random Forest Classifier
(a)Assumption of Random Forest
(b)Performance measure confusion Matrix
(c)Performance Measure: Cost Matrix
iii)Time-series Analysis
(1)Steps in time series forecasting
(2)Demo Air Passenger

- Unsupervised Learning
o K-means clustering
§ Assumption of K-Means clustering
§ Practical Implementation of K-means
o KNN
§ Assumption of K-Means clustering
§ Practical Implementation of KNN
o Apriori Algorithm
§ Assumption of K-Means clustering
§ Practical Implementation of Apririoi Algorithm
Apriori Algorithm Example: Part A
Apriori Algorithm Example: Part B
Apriori Algorithm: Rule Selection
Demo: User-Movie Recommendation Model

o Text Mining
- Learning Objectives
- Overview of Text Mining
- Significance of Text Mining
- Applications of Text Mining
- Natural Language Toolkit Library
- Text Extraction and Preprocessing: Tokenization
- Text Extraction and Preprocessing: N-grams
- Text Extraction and Preprocessing: Stop Word Removal
- Text Extraction and Preprocessing: Stemming
- Text Extraction and Preprocessing: Lemmatization
- Text Extraction and Preprocessing: POS Tagging
- Text Extraction and Preprocessing: Named Entity

Course Details

Course Details

- Recognition
- NLP Process Workflow

- Demo: Processing Brown Corpus
  - Practice: Wiki Corpus, Structuring Sentences: Syntax
  - Rendering Syntax Trees
  - Structuring Sentences: Chunking and Chunk Parsing
  - NP and VP Chunk and Parser
  - Structuring Sentences: Chinking
  - Context-Free Grammar (CFG)
  - Demo: Twitter Sentiments
  - Practice: Airline Sentiment

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