Machine Learning/ Artificial Intelligence (MLAI) Internship

8 Days 70* hours Intensive Certified Internship

India's First ever course work based Internship Focuses on

Machine Learning, Natural Language Processing (NLP), Chatbots, Deep Learning Tools and Techniques

Internship Structure

No of Days: 8

No of Hours: Total 70 (50 Hands-On Training Hours) + (20 Hands-On Hours on Project/Case Assigned)

What is Machine Learning & AI ?

Machine learning focuses on the development of computer programs that can access data and use it learn for themselves. **The primary aim is to allow the computers learn automatically** without human intervention or assistance and adjust actions accordingly.

Artificial intelligence (AI) makes it possible for machines to learn from experience, adjust to new inputs and perform human-like tasks. Most AI examples that you hear about today – from chess-playing computers to self-driving cars – rely heavily on deep learning and natural language processing.

This program will introduce you to the world of ML & AI technologies and equip you to identify the potential problems and provides a better platform to bring technological solutions. The Internship provides hands-on training on various tools and technologies like Neutral Networks, Natural Language Processing (NLP), Development of Chat bots and understanding various tools to build deep learning networks. Participants will understand the essentiality of machine learning and AI through Intensive programming and minimize human efforts. Students will get an overview of application deployment the process involved.

"AI will add 2.3 million jobs by 2020" by Gartner

Technologies you learn

- Python
- Numpy, Scipy
- Scikit-Learn, Pytorch
- Tensor Flow, Keras
- NLTK, Spacy

AI, ML and Deep Learning Constitute 60% of the Demand

Experience is losing its premium. With traditional IT job roles vanishing, Techies are turning to short-term Deep-learning courses to stay in the race.
~ Times of India

Day 1: ML/DL/AI Landscape, Introduction to various Applications & Team Formation.

Introduction to ML/DL/AI

- What is the difference between – ML & AI
- Emerging Possibilities using ML/AI
- How large is the ML/AI Market in different domains?

Intensive Python Programming

Intensive Hands-On with Python to deep dive into ML/AI

- Introduction to Python
- Features of Python
- Modes of Python – Batch script mode , Interpreter mode
- Indentation in Python
- Coding in Python
- Python Data Types
- Objectives, Variables, Types of Variables – String, Numeric Type, Boolean Variables
- Types of Variable lists – Adding Elements to lists, Accessing Elements of the list
- Types of Variables – Dictionary
- Operators – Logical Operators, Arithmetic and numeric operators
- Order of Operands
- Operators on String
- Variables Comparison
- Control Statements
- Loops In Python
- Python in Python
- Objects and Classes in Python
- Imports and Modules

Team Formation - Problem Statement Allocation

ML/AI related industrial problems/Opportunity area will be allocated to participants. Participants will work in a team and present the solution to Industry panelists.

DAY 2: Introduction to ML & Computing Using Python

- Various Techniques Under Machine Learning
  - Supervised Learning
  - Unsupervised Learning
  - Semi-Supervised Learning
  - Reinforcement Learning
  - Data Preprocessing Techniques in ML
  - Refreshing Mathematical Concepts: Linear Algebra, Calculus, Probability and Statistics

- Mathematical Computing by Numpy
- Scientific Computing by Scipy
- Introduction to Various Python Machine Learning Libraries
- Various Application of Data science and Data Visualization

Day 3: Machine Learning (Cont..)

- Regression and its Types
- Linear Regressions – Algorithms and Equations
- Logistic Regression
- K – Nearest Neighbours
- Support Vector machines
- Kernal SVM
- Naïve Bayes
- Decision Tree Classifier
- Random Forest Classifier
- K – Means Clustering
- Clustering Algorithms
- Various Machine Learning Algorithms

Day 4: Natural Language Processing (NLP)

- Introduction to Scikit – Learn
- Using Scikit to do Data mining and Data Classification
- Model Selection and Data sets
- Using of Scikit Learn and Best considerations and techniques
- Use of NLTK and Spacy libraries
- Industry Case Studies and Development of Chatbot and other AI products

Day 5 & 6: Deep Learning / Artificial Intelligence

- Introduction to Deep Learning / Artificial Intelligence
- Importance of Deep Learning
- Artificial Neural Networks (ANN)
- Introduction to Pytorch
- Using Pytorch for Deep Learning

Tensor Flow – Introduction

- Perceptron, Activation Functions
- Introduction to Conventional Neural Networks (CNN)
- Introduction to Recurrent Neural Networks (RNN)
- Deep Learning Applications and Case studies

Day 7: Project Execution

This day is dedicated to Teams to work extensively on tools and technologies thought throughout the program and apply their learning and get clarify their doubts from experts.

Day 8 - Project Day - Presentation

Solution/Project presentation – Peer to Peer learning Day – Learn from your other fellow participants about the projects they are working on and vice versa.

- Best Teams will be selected and awarded "Winner of MLAI Summer'18" with prizes.
- Best Students who perform well throughout the Program will get "Best Intern Award" and certificate of Excellence.

Program Benefits

After the program the students should be able to:

- Understand ML/AI landscape and all emerging areas to develop products
- Understand and build ML/AI applications
- Familiar with various computing techniques and tools
- Understanding of Data Mining, Data Handling tools
- Develop or Train Algorithms for specific purpose
- Develop Simple AI based application for NLP
- Emulate real time ML/AI application sequence
- Conceptualize and develop products using ML/AI
- Develop confidence of presenting their project/Product
- Inclination towards entrepreneurship and business opportunities

Note: Expertshub has all rights to change the structure of the program based upon expert's availability, equipment's availability & lab conditions available at host institutions without prior notification to anybody.

*no of hours mentioned are calculated by both class room training & the time student spend outside the class room for their project work