In partnership with

Artificial Intelligence Developer

Externship Program Course Content

Approved by AICTE

SmartInternz

Start Date: **28 June 2021**

Timings: **5:30 – 7:30 PM**

Duration: **30 Days (3 Weeks Live Sessions + 1 Week Project Development)**

Program Benefits:

- ✓ **40 Hrs. Live Instructor-Led Training**
- ✓ **40 Hrs. Project Development**
- ✓ **Dedicated Mentor Support**
- ✓ **1 Guided Project**
- ✓ **Project Completion Certificate from IBM**
- ✓ **Externship Completion Certificate from SmartInternz**

Course Content

Modules	Content
Module 1	**Introduction to Artificial Intelligence** • What is Artificial Intelligence • History of Artificial Intelligence • Use Cases of Artificial Intelligence • Role of Machine Learning Engineer • Machine Learning Tools & Packages **Introduction to python programming** • Python Data Structures • Python Programming Fundamentals • Conditions and Branching • Loops • Functions • Python Packages
Module 2	**Python for Data Science** • Working with NUMPY • Working with Pandas • Introduction to Data Visualization • Introduction to Matplotlib and Seaborn • Basic Plotting with Matplotlib and Seaborn

Module 3	**Data Wrangling Techniques** • Introduction to Data preprocessing • Importing the Dataset • Handling Missing data • Working with categorical Data • Splitting the data in to Train and Test set • Feature Scaling
Module 4	**Introduction to Neural Networks** • The Neuron • The Activation Function • How do Neural Networks work? • How do Neural Networks learn? • Gradient Descent • Stochastic Gradient Descent • Backpropagation Introduction to Keras Framework • Introduction to the Sequential Mode • Activation functions • Layers • Training • Loss function • Building ANN Using Tensor flow using sample dataset • Evaluating Improving and Tuning ANN
Module 5	**Introduction to Convolutional Neural Networks** • What are convolutional neural networks? • Step 1 - Convolution Operation • Step 1(b) - ReLU Layer • Step 2 - Pooling • Step 3 - Flattening • Step 4 - Full Connection Classification of images using CNN • Evaluating, Improving and Tuning the CNN
Module 6	**Introduction to Recurrent Neural Networks** • The idea behind Recurrent Neural Networks • The Vanishing Gradient Problem • LSTMs • LSTM Variations Predicting Google stock prices using RNN • Evaluating, Improving and Tuning the RNN

Module 7	**Introduction to Natural Language Processing** • Introduction to NTLK • Bag of Words model • Natural Language Processing in Python • Sentiment analysis using Natural Language Processing
Module 8	**IBM Cloud Services** □ Introduction to IBM Cloud □ Introduction to AI in IBM cloud □ Introduction to Watson Studio □ Building Machine learning model in Watson Studio □ Deploying Deep Learning Models as web service
Module 9	Introduction to Auto AI Building a Machine Learning Model Using Auto AI Introduction to IBM Node-red Integrating Machine Learning model to IBM Node-red Building Web Application
Module 10	Introduction to discovery Working with Knowledge Studio Introduction to NLC
Module 11	Introduction to different modes of Deployments Working with Flask frame work Building an application with Flask Framework Integrating Deep learning model with Web Application
Module 12	Introduction to IBM Python Flask APP Deploying Python Flask application on IBM Python F