



 THINK BIG . TRAIN SMART . WIN HARD

# ALGOFORGE STUDIOS

## MACHINE LEARNING | COURSE BROCHURE



ALGOFORGE STUDIOS

01

# ABOUT

US



AlgoForge Studios is a leading training and AI solutions company specializing in Data Science, Machine Learning, Cybersecurity, Generative AI, and Full-Stack technologies.

We provide industry-focused training, live projects, guaranteed paid internships, and placement support to help learners build strong, job-ready technical skills.



02

# MACHINE LEARNING



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Machine Learning enables computers to learn from data and make accurate predictions without being explicitly programmed. It powers modern AI innovations such as recommendation systems, fraud detection, automation, chatbots, and intelligent applications across every industry.

At AlgoForge Studios, the Machine Learning domain focuses on building strong foundations in algorithms, model training, optimization, and real-world deployment—preparing learners for high-demand AI careers.



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# OUR KEY BENEFITS

- Guaranteed Paid Internship
- Industry-Recognized Certification
- 24/7 Access to Learning Materials
- Dedicated Support System
- Live Projects & Real Client Work
- Placement Assistance
- Expert Trainers (7+ Years Experience)

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# COURSES UNDER THIS DOMAIN



**Advance Computer Vision  
Course**



**Machine Learning using Python  
Course**



**Natural Language Processing  
Course**



**Machine Learning With R  
Course**



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# ADVANCED COMPUTER VISION

- Duration: 9+ weeks
- Mode: Online
- Level: Beginner
- Course Fee: ₹39,000



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# COURSE CURRICULUM

01

## Introduction Advance Computer Vision

- How to use Github & Extra Coding Tips (Optional)
- How to Succeed in this Course
- Quiz Module 1

02

## Machine Learning Basic Review

- What is Machine Learning?
- Classification Theory
- Beginners Code Preamble
- Classification Notebook
- Regression Theory
- Regression Notebook
- The Neuron
- How does a model "learn"?
- Making Predictions
- Saving and Loading a Model
- Quiz Module 2

03

## Artificial Neural Network (ANN)

- Artificial Neural Networks Section Introduction
- Forward Propagation
- The Geometrical Picture
- Activation Functions
- Multiclass Classification
- How to Represent Images
- Code Preparation (ANN)
- ANN for Image Classification
- ANN for Regression
- Quiz Module 3

06



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# COURSE CURRICULUM

04

## Convolutional Neural Network

- What is Convolution? (part 1, Part-2, Part-3)
- Convolution on Color Images
- CNN Architecture
- CNN Code Preparation
- CNN for Fashion MNIST
- CNN for CIFAR-10
- Data Augmentation
- Batch Normalization
- Improving CIFAR-10 Results
- Quiz Module 4

05

## VGG and Transfer Learning

- VGG Section Intro
- Whats so special about VGG?
- Transfer Learning
- Relationship to Greedy Layer-Wise Pretraining
- Getting the data
- Code pt 1, pt 2, pt 3
- Quiz Module 5

06

## ResNet and inception

- ResNet Section Intro
- ResNet Architecture
- Transfer Learning with ResNet in Code
- Blood Cell Images Dataset
- How to Build ResNet in Code
- 1x1 Convolutions
- Optional: Inception
- Different sized images using the same network
- Quiz Module 6

07



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# COURSE CURRICULUM

07

## Object Detection (SSD/RetinaNet)

- SSD Introduction
- Object Localization
- What is Object Detection?
- How would you find an object in an image?
- The Problem of Scale
- The Problem of Shape
- SSD Tensorflow Object Detection API
- SSD for Video Object Detection
- Optional: Intersection over Union & Non-max Suppression
- SSD Section Summary
- Quiz Module 7

08

## Neural Style Transfer

- Neural Style Transfer Introduction
- Style Transfer Theory
- Optimizing the Loss
- Code pt 1, pt 2, pt 3
- Style Transfer Section Summary
- Quiz Module 8

09

## Class Aviation Maps

- Class Activation Maps (Theory)
- Class Activation Maps (Code)
- Quiz Module 9

08



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# COURSE CURRICULUM

10

## GANs (Generative Adversarial Networks)

- GAN Theory
- GAN Code
- Quiz Module 10

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## Keras and Tensorflow Basic

- Tensorflow Basics
- Tensorflow Neural Network in Code
- Keras Discussion
- Keras Neural Network in Code
- Keras Functional API
- How to easily convert Keras into Tensorflow 2.0 code
- Quiz Module 12

12

## Object Localization Project

- Localization Introduction and Outline
- Localization Code Outline (pt 1)
- Localization Code (pt 1)
- Localization Code Outline (pt 2)
- Localization Code (pt 2)
- Localization Code Outline (pt 3)
- Localization Code (pt 3)
- Localization Code Outline (pt 4)
- Localization Code (pt 4)
- Localization Code Outline (pt 5)
- Localization Code (pt 5)
- Localization Code Outline (pt 6)
- Localization Code (pt 6)
- Localization Code Outline (pt 7)
- Localization Code (pt 7)
- Quiz Module 12

09



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## Setting Up Your Environment

- Anaconda Environment Setup
- How to install Numpy,
- Scipy, Matplotlib, Pandas, IPython, Theano, and
- TensorFlow
- Quiz Module 13

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## Extra Help With Python Coding for Beginners

- Where to get the code, notebooks, and data
- How to Code by Yourself (part 1) (part 2)
- Proof that using Jupyter Notebook is the same as not using it
- Python 2 vs Python 3
- Quiz Module 14

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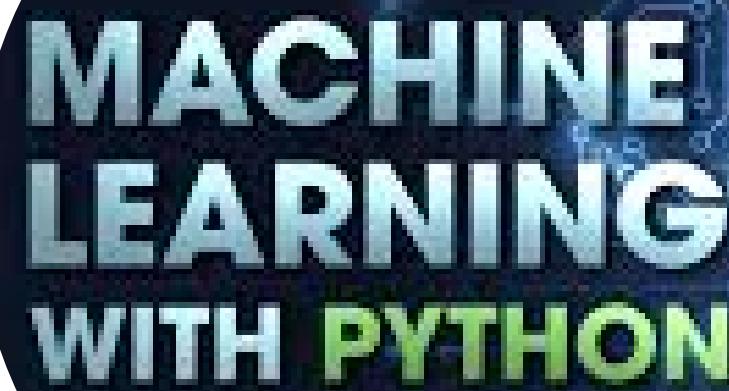
## Complimentary Module Soft Skills Development

- Business Communication
- Preparation for the Interview
- Presentation Skills
- Resume writing



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MACHINE  
LEARNING  
WITH PYTHON

The logo features the text 'MACHINE LEARNING WITH PYTHON' in a bold, sans-serif font. The word 'PYTHON' is in green, while the rest is in blue. The background of the logo is a dark blue gradient with a faint circuit board pattern.

# MACHINE LEARNING WITH PYTHON

- Duration: 8+ weeks
- Mode: Online
- Level: Intermediate
- Course Fee: 10,500



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01

## Introductory

- Introductory Topics to Analytics
- Understanding the need for Analytics in Specific Domain; CRISP Modeling
- Introduction to Data Management
- Properties & Types of Data, Measurement Scale, Basic Statistics on Data

- Basics of Python Programming
- Need for Python, Features of Python, Download, Setup, Installation; Python & Python Studio; Configuration. e.g. Learning to setup Python and share Code
- Data Structures in Python
- Creating and Understanding Basic Data Structures in Python – Vector, List, Matrix, Array, Data Frame & Factors which help in creating data in Python programming

- Data Manipulation & Summarization in Python
- Understanding how data can be summarized in different ways to do Descriptive Analysis which describes features of data
- Quiz Module 1

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02

## Regression

- Analytical Modeling
- Understand what is Modeling and how it can be used in Various Domain
- Statistical Tests
- P Value, Z Value, Hypothesis, Null Hypothesis, Alternative Hypothesis, F Test, ANOVA Introduction)

- Linear Regression Using Python
- Start of Machine Learning, Develop a Prediction Model for predicting a financial values based on one or more than 1 Independent Variable; Understand the assumptions and measures of goodness of Model, Understand its prediction ability
- Visualization using Graphs
- Creating Graph in Python and understanding which graph to be used

- Missing Value and Outlier Analysis
- Understanding how missing values & outliers are handled in data summarization & modeling
- Logistic Regression
- Predicting Binary Outcome (Buy or not, Churn or not, Loan Default or not) based on Independent Variables e.g. Predicting Cases for Fraud, Default on Payment
- Quiz Module 2

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03

## Unsupervised Learning

- Clustering
- Grouping Customers based on characteristics so that they can be target for sale increase
- Decision Trees
- When to use CART & CHAID to create a decision tree based on categorical variables.

04

## Analysis

- Association Rule Analysis
- Understand how Association Rules can be created using Market Basket Analysis. Finding Interesting association between items purchased by Customers and building strategy to sell more
- Twitter Analysis
- Configure Twitter Account & Application; Setup for downloading tweets and analyse them for positive and negative sentiments related to Financial News/ Articles
- Quiz Module 4





# NATURAL LANGUAGE PROCESSING WITH ML

- Duration: 8+ weeks
- Mode: Online
- Level: Intermediate
- Course Fee: ₹8800



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# COURSE CURRICULUM

01

## Introduction to NLP

- Introduction to Natural Language Processing
- Components of NLP
- Applications of NLP
- Challenges and scope
- Data formats
- Text Processing

- Assisted Practice:  
Implement Text Processing Using Stemming and Regular Expression after Noise Removal and Convert It into List of Phrases
- Preprocessing in NLP- Tokenization, Lemmatization, Stemming, Normalisation, Stop
- Tweets Cleanup and Analysis Using Regular Expressions
- Test of Module 1

02

## Feature Engineering on text data

- N-Gram
- Bag of Words
- Document Term Matrix
- TF-IDF
- Levenshtein Distance
- Word Embedding(Word2Vec)
- Doc2vec
- PCA
- Word Analogies
- Dense Encoding

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- Topic Modelling
- Assisted Practice: Word2vec Model Creation
- Assisted Practice: Word Analogies Demo
- Assisted Practice: Identify Topics from News Items
- Build Your Own New Search Engine
- Quiz Module 2

03

## Natural Languages Understanding Techniques

- Parts of Speech Tagging
- Dependency Parsing
- Constituency Parsing
- Morphological Parsing
- Named Entity Recognition
- Coreference Resolution
- Word Sense Disambiguation
- Fuzzy Search
- Document and Sentence Similarity

- Document Indexing
- Sentiment Analysis
- Assisted Practice: Analyzing the Disease and Instrument Name with the Action Performed
- Assisted Practice: Analyzing the Sentiments
- Assisted Practice: Extract City and Person Name from Text
- Identifying Top Product Feature from User Reviews
- Quiz Module 3



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# COURSE CURRICULUM

04

## Natural Language Generation

- Retrieval based model
- Generative based model
- AIML
- Language Modelling
- Sentence Correction
- Assisted Practice: Create AIML Patterns for QnA on Mental Wellness
- Assisted Practice: To Predict the Next Word in a Sentence
- Create your Own Spell Checker
- Quiz Module 4

05

## NLP Libraries

- Spacy
- NLTK
- Gensim
- TextBlob
- Stanford NLP
- LUIS
- Assisted Practice: Simplilearn Review Analysis
- Create your Own NLP Module
- Quiz Module 5

06

## NLP with machine learning and deep Learning

- Neural Machine Translation
- Introduction to RNN, LSTM
- LSTM Forward Pass
- LSTM Backprop through time
- Applications of LSTM
- Advanced LSTM Structures
- Encoder Decoder Attention
- Text Classification and Summarization
- Document Clustering
- Attention Mechanism
- Question Answering Engine
- Assisted Practice: Target Spam Words and Patterns
- Assisted Practice: Summarization of News
- Document Clustering for BBC News
- Quiz Module 6



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07

## Speech Recognition Techniques

- Basic concepts for voice/sound
- Sequential models
- Creating speech model
- Saving model
- Implementation/use cases
- Speech libraries
- Assisted Practice: Translation from Speech to Text
- Speech to Text: Extract Keywords from Audio Reviews
- Quiz Module 7

08

## Complimentary Module Soft Skills Development

- Business Communication
- Preparation for the Interview
- Presentation Skills

09

## Complimentary Module Resume Writing

- Resume Writing



# MACHINE LEARNING WITH R CERTIFICATION

- Duration: 7+ weeks
- Mode: Online
- Level: Beginner
- Course Fee: ₹9900



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# COURSE CURRICULUM

01

## Course Overview

- Overview
- Quiz Module 1

02

## Concept Learning

- Analytics Definition and Applications
- Data Science, Data Mining, Statistics
- Machine Learning, Supervised vs Unsupervised Learning
- Quiz Module 2

03

## R Introduction

- About R: R Installation
- Data Import and Export
- Operators in R
- Data Types and Data Structures
- Quiz Module 3



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# COURSE CURRICULUM

04

## Handling Data in R

- Handling packages in R
- Subsetting Data in R
- Data Management in R
- Loops and if else statement
- Missing values in R
- Quiz Module 4

05

## Basic Statistics

- Descriptive Statistics
- Quiz Module 5

06

## Data Manipulation in R

- Apply Family in R
- Aggregate and Table Commands
- Data Manipulation in R
- Quiz Module 6



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07

## Graphical Representation of Data

- Summarising the data graphically
- Advanced Graphs with R
- Quiz Module 7

08

## Regression

- Simple Linear Regression
- Multi Linear Regression
- Logistic Regression
- Quiz Module 8

09

## Decision Tree

- Regression Tree
- Classification Tree
- Quiz Module 9



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# COURSE CURRICULUM

10

## Cluster Analysis

- Clustering Analysis Introduction
- Hierarchical Clustering
- K-means Clustering
- Quiz Module 10

11

## Complimentary Module Soft Skills Development

- Business Communication
- Preparation for the Interview
- Presentation Skills

12

## Complimentary Module Resume Writing

- Resume Writing

# CAREER OPPORTUNITIES FOR MACHINE LEARNING



- Machine Learning Engineer
- AI Engineer
- Deep Learning Engineer
- Data Scientist (ML Focus)
- Automation/AI Analyst
- ML Research Analyst



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# WHY CHOOSE ALGOFORGE

AlgoForge Studios stands out as a leading training hub because we combine industry expertise with practical, project-driven learning. All our courses are taught by experienced professionals with strong real-world backgrounds. We focus on hands-on training through live projects, case studies, and real client assignments, ensuring students gain skills that directly meet industry needs. Our programs are powered by advanced infrastructure including NVIDIA DGX A100 systems for high-performance AI and deep learning workloads. We also provide internships, placement support, personalized mentorship, and portfolio-building guidance to help students confidently begin their careers. With flexible learning options, an updated curriculum, and affordable fees, AlgoForge Studios offers a complete, career-focused pathway for anyone looking to excel in tech.



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# GET IN TOUCH WITH US

Thank you for joining us on this journey through innovation and technology. For further inquiries or collaborations, please feel free to contact us



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