Cognixia®

Machine Learning & Deep Learning

www.cognixia.com

About Cognixia

Cognixia- A Digital Workforce Solutions Company is dedicated to delivering exceptional trainings and certifications in digital technologies. Founded in 2014, we provide interactive, customized training courses to individuals and organizations alike, and have served more than 130,000 professionals across 45 countries worldwide.

Our team of more than 7000 industry experts facilitate more than 450 comprehensive digital technologies courses, along with state-of-the-art infrastructure, to deliver the best learning experience for everyone. Our comprehensive series of instructor-led online trainings, classroom trainings and on-demand self-paced online trainings cover a wide array of specialty areas, including all of the following:

• IoT
• Big Data
• Cloud Computing
• Cyber Security
• Machine Learning
• AI & Deep Learning
• Blockchain Technologies
• DevOps

Cognixia is ranked amongst the top ve Ā emerging technologies training companies by various prestigious bodies. We're also RedHat Enterprise Partner, Microsoft Silver Learning Partner and an authorized training partner for ITIL, Automation Anywhere and ISC2.

OUR AWARDS & AFFILIATIONS

Best Workplace Amongst Emerging Enterprises Awarded By **Great Indian Workplace Awards** – 2018 Mumbai, India

Best Training Provider of the Year Awarded By **The Golden Globe Tiger Awards** – 2018 Kuala Lampur, Malaysia

TOP 5 Big Data TRAINING INSTITUTES 2017 **siliconindia**

WORLD HRD CONGRESS — Cognixia is awarded as Training Company of the Year, 2018

Top 10 IoT Training Companies for the **Second consecutive year.** 2017 IoT India MAGAZINE

TOP 10 PROMISING IoT TRAINING INSTITUTES IN INDIA 2017 HIGHER EDUCATION Review

World HRD Congress has awarded for Excellence in Training (Asia)

TOP 5 CLOUD TRAINING INSTITUTIONS INDIA 2016 HIGHER EDUCATION Review

Asian Training & Leadership Award, Dubai

siliconindia BEST TRAINING PROVIDER **BIG DATA HADOOP DEVELOPER OF THE YEAR 2016**

Top 10 IoT Training Institutes – 2016 Analytics India MAGAZINE

Best of Pages 2019 — Top 10 Linkedin Best of Pages, 2019

ISO 9001 2015 CERTIFIED — ISO 9001:2015 Certified Quality Management System

ISO ISO/IEC 27001:2013 — ISO/IEC 27001:2013 Certified Information Security Management System

AUTHORIZED TRAINING PARTNERS FOR

(ISC)² OFFICIAL TRAINING PARTNER

AUTOMATION ANYWHERE

ITIL®

Silver Microsoft Partner

PMI®

Machine Learning Market Outlook

According to Fortune Business Insights, the machine learning market reached a value of approximately $15.50 billion in 2021 and will grow to $152.24 billion in 2028, with a project CAGR of 38.6% during this period. The growth in machine learning is led by the healthcare, retail, IT, telecommunications, BFSI, and automotive sectors. By 2025, the global NLP market is expected to reach over $34 billion, growing at a CAGR of 21.5%.

Cognixia's Machine Learning & Deep Learning Training

Cognixia's machine learning and deep learning training aims to help individuals upskill in the field of machine learning & NLP, and make the most of the burgeoning skills gap. This training is live, online, instructor-led with hands-on projects and assignments. It covers important concepts like the fundamentals of Python, supervised and unsupervised ML algorithms, reinforcement learning, as well as fundamentals of NLP. The training is intended to help participants learn all the essential skills and concepts to build a successful career in the field.

Who should take this course?

The machine learning and deep learning training course is highly recommended for:

- Content analysts
- Software engineers
- Data analysts

Prerequisites

To enroll in this machine learning training & certification course, participants need to have a basic-level knowledge of Python programming.

Program Structure

- 42 hours of live online instructor-led training

- Industry experienced instructor

- 24x7 dedicated PoC support

- Multiple hands-on labs for different modules

Detailed Curriculum: Modules

Module 1: Python Basics

- Overview of Python

- Python basics – variables, identifiers, indentation

- Data structures in Python (list, strings, sets, tuples, dictionary)

- Statements in Python (conditional, iterative, jump)

- Functions in Python

- Lambda functions

Module 2: Introduction to NumPy, Pandas, and Matplotlib

- Create arrays using NumPy

- Perform various operations on arrays and manipulate them

- Indexing, slicing and iterating

- Reading and writing data from text/CSV files into arrays and vice-versa

- Creating series and data frames in Pandas

- Data structures and index operations in Pandas

- Reading and writing data from Excel/CSV formats into Pandas

- Creating simple plots in Matplotlib

- Grids, axes, plots, markers, colors, fonts, and styling

- Types of plots – bar graphs, pie charts, histograms contour plots

- Choosing the right plot format for a problem at hand

- Scale and add style to your plots

Module 3: Introduction to Machine Learning with Python

- What is machine learning?

- Introduction to machine learning

- Types of machine learning

- Basic probability required for machine learning

- Linear algebra required for machine learning

Module 4: Basic Statistics

- Measures of central tendency – mean, median, mode

- Measures of spread – IQR, variance, and standard deviation

- Missing value treatment

- Outlier treatment

- Univariate and multivariate analysis

- Inferential statistics

- Hypothesis testing – Type I and Type II errors

- P-value

- Level of significance

- Confidence interval

- Probability basics and conditional probability

- Exploratory Data Analysis(EDA) – Practical use case

Detailed Curriculum: Modules

Module 5: Supervised and Unsupervised Machine Learning Algorithms

- Simple linear regression
- R2 and RMSE
- Logistic regression
- Decision trees
- Random forests
- SVM
- Naïve Bayes
- Confusion Matrix
- Dimensionality reduction – PCA
- Cluster algorithms
- K-means Clustering
- Agglomerative Clustering

Module 6: Reinforcement Learning

- Understanding reinforcement learning
- Algorithms associated with reinforcement learning
- Q-learning Model

Module 7: Introduction to Artificial Neural Networks (ANN)

- A Perceptron
- Neural networks
- Activation functions
- Deep learning with Keras
- Errors and Biases
- Back propagation
- Building your first neural network
- Building artificial neural networks with Python (Model creation using TF/Keras)
- Computer vision – OpenCV
- Introduction to OpenCV – working with images

Module 8: Natural Language Processing Basics

- Basics of natural language processing
- Removing stop words
- Stemming and lemmatization
- Parts of speech tagging
- TFIDF vectorizer
- Sentiment analysis
- SMS spam classifier

Case Study – Practical

Aim:

This scenario focuses on exploratory data analysis and the path to create a machine learning model of recent pandemic COVID 19 which is threatening worldwide. This case study aims to understand the data, convert it into a data frame and perform the analysis with mentioned steps of the algorithm.

Use the python centric packages that would be typically needed to develop a solution for the case above. Python 3.7+ recommended.

a) Write the steps involved and develop the code to convert the data from the dataset of the above case study into a data frame. The data given includes details of all patients who were contracted with Pandemic from Nov 2019 and it is represented in the format of a .csv file. We must convert the file into a data frame to continue with further analysis.

b) Analyzing the features, create a feature extraction analysis, considering the columns important for EDA. Manipulate only those columns which are important for visualization and the threatening scenario of the pandemic.

c) Plot the data to understand the survival rate or mortality rate of the recent pandemic from the case study and the data given.

Cognixia USPs

- LIFETIME LMS ACCESS
- 24 x 7 SUPPORT
- REAL-LIFE PROJECTS & CASE STUDIES
- INDUSTRY EXPERTS AS TRAINERS
- INDUSTRY STANDARD CERTIFICATE

POTENTIAL CAREER OPTIONS

- **NLP engineers**
- **NLP analysts**
- **Python NLP developers**
- **Conversational AI engineers**
- **Deep learning engineers**
- **Machine learning engineers**
- **Chatbot developers**

Machine Learning & Deep Learning

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