

Master Program

MASTER IN GENERATIVE AI



500K+

Satisfied Students



100K+

Online Students



300+

Trainers



300K+

Placements



200+

Global Certifications



150+

Companies

| Program INDEX



Module 1: Excel



Module 2: SQL



Module 3: PowerBI



Module 4: Tableau



Module 5: Python for AI



Module 6: Machine Learning



Module 7: Understanding Deep Learning for AI



Module 8: Generative AI

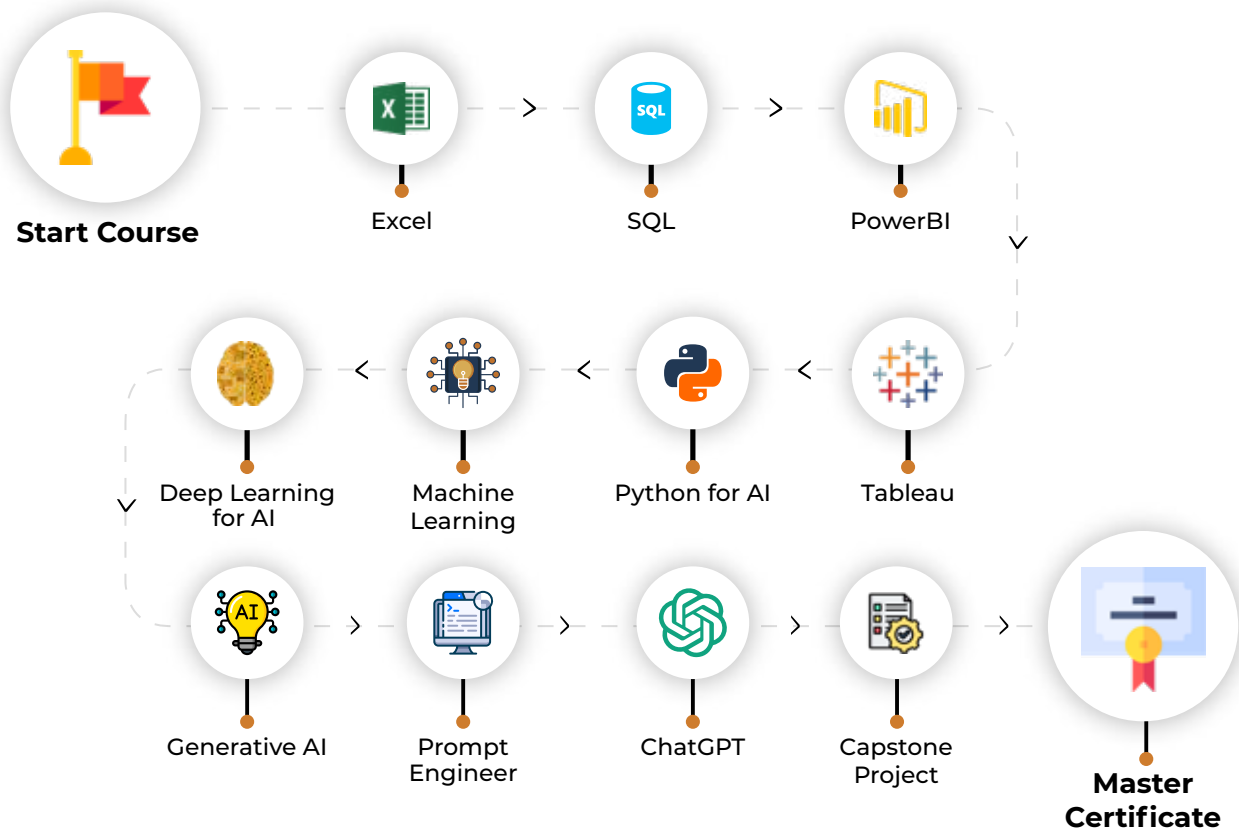


Module 9: Prompt Engineer



Module 10: ChatGPT

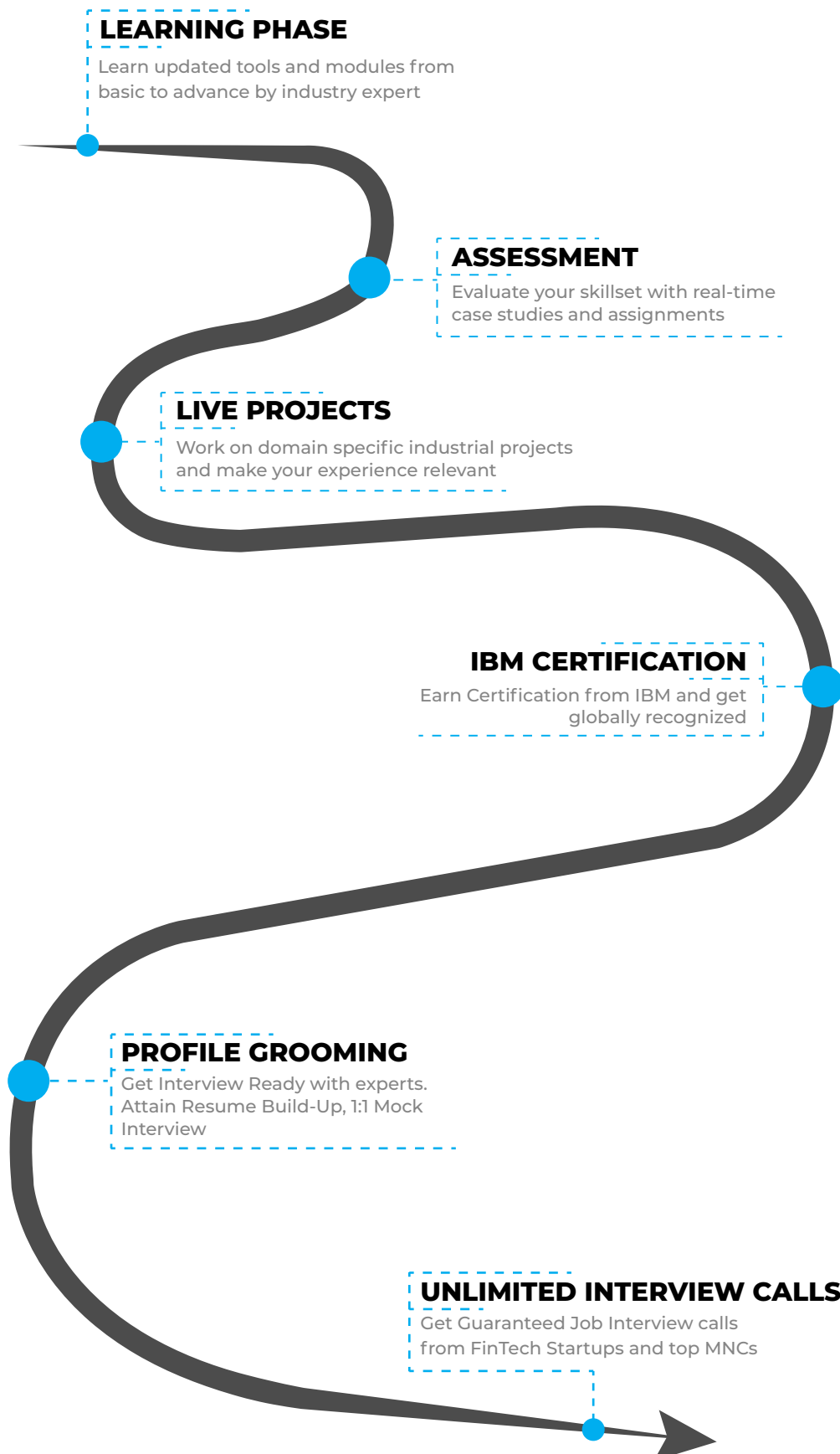
| Learning Curve



Modules of **Master in Generative AI**

- ✓ Excel
- ✓ SQL
- ✓ PowerBI
- ✓ Tableau
- ✓ Python for AI
- ✓ Machine Learning
- ✓ Understanding Deep Learning for AI
- ✓ Generative AI
- ✓ Prompt Engineer
- ✓ ChatGPT

|Transition Process



Module 1: Excel

✓ Presenting And Managing Data In Excel

- Basic Understanding Menu and Toolbar
- Introduction to different category of functions
- Creation of Excel Sheet Data
- Range Name, Format Painter
- Conditional Formatting, Wrap Text, Merge & Centre
- Sort, Filter, Advance Filter
- Different type of Chart Creations
- Auditing, (Trace Precedents, Trace Dependents) Print Area
- Data Validations, Consolidate, Subtotal
- What if Analysis (Data Table, Goal Seek, Scenario)
- Solver, Freeze Panes
- Various Simple Functions in Excel (Sum, Average, Max, Min)
- Real Life Assignment work

✓ Manage Workbook Options And Settings

- Manage workbook
 - Save a workbook as a template,
 - copy macros between workbooks,
 - reference data in another workbook,
 - reference data by using structured references,
 - enable macros in a workbook,
 - display hidden ribbon tabs
- Manage workbook review
 - Restrict editing,
 - protect a worksheet
 - configure formula calculation options
 - protect workbook structure
 - manage workbook versions
 - encrypt a workbook with a password

✓ Apply Custom Data Formats And Layouts

- Apply custom data formats and validation
 - Create custom number formats
 - populate cells by using advanced Fill Series options
 - configure data validation
- Apply advanced conditional formatting and filtering
 - Create custom conditional formatting rules
 - create conditional formatting rules that use formulas
 - manage conditional formatting rules
- Create and modify custom workbook elements
 - Create custom color formats,
 - create and modify cell styles,

- create and modify custom themes,
- create and modify simple macros
- insert and configure form controls
- Prepare a workbook for internationalization
 - Display data in multiple international formats
 - apply international currency formats,
 - manage multiple options for Body and Heading fonts

✓ Create Advanced Formulas

- Apply functions in formulas
 - Perform logical operations by using AND, OR, and NOT functions;
 - perform logical operations by using nested functions
 - perform statistical operations by using SUMIFS, AVERAGEIFS, COUNTIFS functions
- Look up data by using functions
 - Look up data by using the VLOOKUP function,
 - look up data by using the HLOOKUP function,
 - look up data by using the MATCH function,
 - look up data by using the INDEX function
- Apply advanced date and time functions
 - Reference the date and time by using the NOW and TODAY functions,
 - serialize numbers by using date and time functions
- Perform data analysis and business intelligence
 - Reference the date and time by using the NOW and TODAY functions
 - import, transform, combine, display, and connect to data
 - consolidate data
 - perform what-if analysis by using Goal Seek and Scenario Manager
 - use cube functions to get data out of the Excel data model
 - calculate data by using financial functions
- Troubleshoot formulas
 - Trace precedence and dependence
 - monitor cells and formulas by using the Watch Window
 - validate formulas by using error checking rules,
 - Evaluate formulas
- Define named ranges and objects
 - Name cells,
 - name data ranges,
 - name tables,
 - manage named ranges and objects
- Module 5: Create Advanced Charts and Tables
- Create advanced charts
 - Add trendlines to charts,
 - create dual-axis charts,
 - save a chart as a template
- Create and manage PivotTables
 - Create PivotTables,
 - modify field selections and options,

- create slicers,
- group PivotTable data,
- reference data in a PivotTable by using the GETPIVOTDATA function,
- add calculated fields,
- format data
- Create and manage PivotCharts
 - Create PivotCharts,
 - manipulate options in existing PivotCharts,
 - apply styles to PivotCharts,
 - drill down into PivotChart details

✓ MIS Reporting And Dashboards (Any 03 Dashboards)

- Dashboard Background
- Dashboard Elements
- Interactive Dashboards
- Type of Reporting in India
- Reporting Analyst
- Indian Print Media Reporting
- Audit Report
- Accounting MIS Reports
- HR MIS Reports
- MIS Report Preparation Supplier, Exporter
- Data Analysis
- Costing Budgeting Mis Reporting
- MIS Reporting for Manufacturing Company
- MIS Reporting for Store and Billing
- Product Performance Report
- Member Performance Report
- Customer-Wise Sales Report
- Collections Report
- Channel Stock Report
- Prospect Analysis Report
- Calling Reports
- Expenses Report
- Stock Controller MIS Reporting
- Inventory Statement
- Payroll Report
- Salary Slip
- Loan Assumption Sheet
- Invoice Creation

✓ Macros And VBA

- What is a Macro?
- Recording a Macro.
- Different components of a macro.
- What is VBA and how to write macros in VBA.
 - Writing a simple macro

- Apply arithmetic operations on two cells using macros.
- How to align the text using macros.
- How to change the background color of the cells using macros.
- How to change the border color and style of the cells using macros.
- Use cell referencing using macros.
- How to copy the data from one cell and paste it into another.
- How to change the font color of the text in a cell using macros.

✓ Incorporating AI Into Excel

- Recognize patterns and extract data from images with Excel AI tools
- Find and match patterns in datasets using Flash Fill
- Apply AI algorithms to transform data in Power Query
- Review AI recommendations for charts and pivot tables
- Analyze data and make predictions using the Forecasting tool
- Automate data analysis using the Analyze Data tool

✓ Combining ChatGPT With Microsoft Excel

- Leverage the power of ChatGPT to make your workday more productive
- Evaluate specific data analysis needs using ChatGPT prompts
- Solve everyday Excel challenges with ChatGPT
- Configure the ChatGPT API to add a connection to Excel
- Create advanced formulas with the Excel Labs feature

Module 2: SQL

✓ SQL Fundamental

- Introduction & Software Installation
 - Overview of Oracle Database
 - Introduction to SQL and its Development Environments
 - Installing Oracle
 - Installing Java SDK
 - Installing SQL Developer Client
- Overview of RDBMS Concepts And Terminologies
 - What is RDBMS
 - Features of RDBMS
 - Advantages of RDBMS
 - Database Normalization
 - SQL Constraints
 - SQL RDBMS Concept
 - Types of keys in DBMS
- Database Design and Basics
 - Understanding of Database Terms
 - What is Good Database Design?
 - The Design Process
 - Determining the purpose of your Database
 - Finding and Organizing the required Information

- Dividing the Information into Tables
- Turning Information Items into Columns
- Specifying Primary Keys
- Creating the Table Relationships
- Refining the Design
- Applying the Normalization Rules
- Database Security Concepts
 - The Scope of Database Security
 - Overview | Threats to the Database | Principles of Database Security
 - Security Models
 - Access Control | Authentication and Authorisation | Authentication | Authorisation | Access Philosophies and Management
 - Database Security Issues
 - Access to Key Fields | Access to Surrogate Information | Problems with Data | Extraction | Access Control in SQL | Discretionary Security in SQL | Schema | Level | Authentication | Table Level | SQL System Tables | Mandatory Security in SQL | Data Protection
- Database Performance
 - Optimize Queries
 - Create Optimal Indexes
 - Memory Allocation
 - Data Defragmentation
- Retrieve Data Using The Sql Select Statement
 - List the Capabilities Of Sql Select Statements
 - Generate a Report Of Data From the Output Of a Basic Select Statement
 - Use Arithmetic Expressions and Null Values In the Select Statement
 - Invoke Column Aliases
 - Concatenation Operator, Literal Character Strings, Alternative Quote Operator, and the
 - Distinct Keyword
 - Display the Table Structure Using the Describe Command
- Restricted And Sorted Data
 - Write Queries With a Where Clause to Limit the Output Retrieved
 - Describe the Comparison Operators and Logical Operators
 - Describe the Rules Of Precedence For Comparison and Logical Operators
 - Usage Of Character String Literals In the Where Clause
 - Write Queries With an Order By Clause
 - Sort the Output In Descending and Ascending Order
 - Substitution Variables
- Usage Of Single-Row Functions To Customize Output
 - List the Differences Between Single Row and Multiple Row Functions
 - Manipulate Strings Using Character Functions
 - Manipulate Numbers With the ROUND, TRUNC, and MOD Functions
 - Perform Arithmetic With Date Data
 - Manipulate Dates With the DATE Functions
- Conversion Functions And Conditional Expressions
 - Describe Implicit and Explicit Data Type Conversion

- Describe The TO_CHAR, TO_NUMBER, And TO_DATE Conversion Functions
- Nesting Multiple Functions
- Apply the NVL, NULLIF, and COALESCE Functions to Data
- Usage Of Conditional IF THEN ELSE Logic In a SELECT Statement
- Aggregated Data Using The Group Functions
 - Usage Of The Aggregation Functions In SELECT Statements To Produce Meaningful Reports
 - Describe the AVG, SUM, MIN, and MAX Function
 - How to Handle Null Values In a Group Function?
 - Divide The Data In Groups By Using The GROUP BY Clause
 - Exclude Groups Of Data By Using The HAVING Clause
- Display Data From Multiple Tables
 - Write SELECT Statements To Access Data From More Than One Table
 - Join Tables Using SQL:1999 Syntax
 - View Data That Does Not Meet a Join Condition By Using Outer Joins
 - Join A Table To Itself By Using a Self-Join
 - Create Cross Joins
- Usage Of Subqueries To Solve Queries
 - Use a Subquery To Solve a Problem
 - Single-Row Subqueries
 - Group Functions In A Subquery
 - Multiple-Row Subqueries
 - Use The ANY and ALL Operator In Multiple-Row Subqueries
 - Use The EXISTS Operator
- SET Operators
 - Describe The SET Operators
 - Use A SET Operator To Combine Multiple Queries Into a Single Query
 - Describe The UNION, UNION ALL, INTERSECT, and MINUS Operators
 - Use The ORDER BY Clause In Set Operations
- Data Manipulation
 - Add New Rows To a Table
 - Change The Data In a Table
 - Use The DELETE and TRUNCATE Statements
 - How To Save and Discard Changes With The COMMIT and ROLLBACK Statements
 - Implement Read Consistency
 - Describe The FOR UPDATE Clause
- DDL Statements To Create And Manage Tables
 - Categorize Database Objects
 - Create Tables
 - Describe The Data Types
 - Understand Constraints
 - Create a Table Using A Subquery
 - How To Alter a Table?
 - How To Drop a Table?
- Other Schema Objects
 - Create, Modify, And Retrieve Data From a View

- Perform Data Manipulation Language (DML) Operations On a View
- How to Drop a View?
- Create, Use, and Modify a Sequence
- Create and Drop Indexes
- Create and Drop Synonyms

✓ Advance SQL

- Manipulating Data
 - Default Values for Columns
 - Virtual Columns
 - Arithmetic Calculations on NULL Values
 - Multi table Insert's
 - Merge the Data
- Analytical Functions
 - Analytical Functions Introduction
 - Getting the Cumulative Sum of Sales
 - Displaying Sales as a Percentage of Total Sales
 - Ranking your Data
 - Performing Top N Analysis
 - Dividing your Data into Bands
 - LAG and LEAD Function Examples
 - Analyzing Sales Growth Across Time
 - Analytical Functions Recap
- Transforming the Data
 - Row Level Data to Column Level using CASE statement
 - Row Level Data to Column Level using PIVOT
 - Row Level Data to Column Level using LISTAGG
 - Column Level Data to Row Level using UNION
 - Column Level Data to Row Level using UNPIVOT
- Hierarchical Queries
 - Hierarchical Queries Introduction
 - Connect By Clause
 - Creating the Hierarchy Tree
 - Sorting the Hierarchy Tree
 - CONNECT_BY_ROOT Unary Operator
 - SYS_CONNECT_BY_PATH Function
 - CONNECT BY for Number Generation
- Regular Expressions
 - Regular Expressions Introduction
 - Meta Characters . and +
 - Meta Characters ? and *
 - Interval Operator to Match the Number of Occurrences
 - Matching the Characters in a List
 - Combine Multiple Expressions Using |
 - Check for an Expression in the Beginning or End of a String
 - Search for Meta Characters by Placing a Escape Character
- Materialized Views

- Materialized Views Introduction
- Materialized Views Creation Options
- Materialized Views with ON COMMIT Option
- Materialized Views with ON DEMAND Option
- Materialized Views with REFRESH FAST Option
- Timing the Refresh

Module 3: Power BI

✓ Introduction To Power BI

- Overview of BI concepts
- Why we need BI?
- Introduction to SSBI
- SSBI Tools
- Why Power BI?
- What is Power BI?
- Building Blocks of Power BI
- Getting started with Power BI Desktop
- Get Power BI Tools
- Introduction to Tools and Terminology
- Dashboard in Minutes
- Interacting with your Dashboards
- Sharing Dashboards and Reports

✓ Power BI Desktop

- Power BI Desktop
- Extracting data from various sources
- Workspaces in Power BI

✓ Power BI Data Transformation

- Data Transformation
- Query Editor
- Connecting Power BI Desktop to our Data Sources
- Editing Rows
- Understanding Append Queries
- Editing Columns
- Replacing Values
- Formatting Data
- Pivoting and Unpivoting Columns
- Splitting Columns
- Creating a New Group for our Queries
- Introducing the Star Schema
- Duplicating and Referencing Queries
- Creating the Dimension Tables
- Entering Data Manually
- Merging Queries

- Finishing the Dimension Table
- Introducing the another DimensionTable
- Creating an Index Column
- Duplicating Columns and Extracting Information
- Creating Conditional Columns
- Creating the FACT Table
- Performing Basic Mathematical Operations
- Improving Performance and Loading Data into the Data Model

✓ **Modelling With Power BI**

- Introduction to Modelling
- Modelling Data
- Manage Data Relationship
- Optimize Data Models
- Cardinality and Cross Filtering
- Default Summarization & Sort by
- Creating Calculated Columns
- Creating Measures & Quick Measures

✓ **Data Analysis Expressions (DAX)**

- What is DAX?
- Data Types in DAX
- Calculation Types
- Syntax, Functions, Context Options
- DAX Functions
 - Date and Time
 - Time Intelligence
 - Information
 - Logical
 - Mathematical
 - Statistical
 - Text and Aggregate
- Measures in DAX
- Measures and Calculated Columns
- ROW Context and Filter Context in DAX
- Operators in DAX - Real-time Usage
- Quick Measures in DAX - Auto validations
- In-Memory Processing DAX Performance

✓ **Power BI Desktop Visualisations**

- How to use Visual in Power BI?
- What Are Custom Visuals?
- Creating Visualisations and Colour Formatting
- Setting Sort Order
- Scatter & Bubble Charts & Play Axis
- Tooltips and Slicers, Timeline Slicers & Sync Slicers
- Cross Filtering and Highlighting
- Visual, Page and Report Level Filters

- Drill Down/Up
- Hierarchies and Reference/Constant Lines
- Tables, Matrices & Conditional Formatting
- KPI's, Cards & Gauges
- Map Visualizations
- Custom Visuals
- Managing and Arranging
- Drill through and Custom Report Themes
- Grouping and Binning and Selection Pane, Bookmarks & Buttons
- Data Binding and Power BI Report Server

✓ Introduction To Power BI Dashboard And Data Insights

- Why Dashboard? and Dashboard vs Reports
- Creating Dashboards
- Configuring a Dashboard Dashboard Tiles, Pinning Tiles
- Power BI Q&A
- Quick Insights in Power BI

✓ Direct Connectivity

- Custom Data Gateways
- Exploring live connections to data with Power BI
- Connecting directly to SQL Server
- Connectivity with CSV & Text Files
- Excel with Power BI Connect Excel to Power BI, Power BI Publisher for Excel
- Content packs
- Update content packs

✓ Publishing And Sharing

- Introduction and Sharing Options Overview
- Publish from Power BI Desktop and Publish to Web
- Share Dashboard with Power BI Service
- Workspaces (Power BI Pro) and Content Packs (Power BI Pro)
- Print or Save as PDF and Row Level Security (Power BI Pro)
- Export Data from a Visualization
- Export to PowerPoint and Sharing Options Summary

✓ Refreshing Datasets

- Understanding Data Refresh
- Personal Gateway (Power BI Pro and 64-bit Windows)
- Replacing a Dataset and Troubleshooting Refreshing

Module 4: Tableau

✓ Introduction To Data Preparation Using Tableau

- Data Visualization
- Business Intelligence tools
- Introduction to Tableau

- Tableau Architecture
- Tableau Server Architecture
- VizQL Fundamentals
- Introduction to Tableau Prep
- Tableau Prep Builder User Interface
- Data Preparation techniques using Tableau Prep Builder tool

✓ **Data Connection With Tableau Desktop**

- Features of Tableau Desktop
- Connect to data from File and Database
- Types of Connections
- Joins and Unions
- Data Blending
- Tableau Desktop User Interface

✓ **Basic Visual Analytics**

- Visual Analytics
- Basic Charts Bar Chart, Line Chart, and Pie Chart
- Hierarchies
- Data Granularity
- Highlighting
- Sorting
- Filtering
- Grouping
- Sets

✓ **Calculations In Tableau**

- Types of Calculations
- Built-in Functions (Number, String, Date, Logical and Aggregate)
- Operators and Syntax Conventions
- Table Calculations
- Level of Detail (LOD) Calculations
- Using R within Tableau for Calculations

✓ **Advanced Visual Analytics**

- Parameters
- Tool tips
- Trend lines
- Reference lines
- Forecasting
- Clustering

✓ **Level Of Detail (LOD) Expressions In Tableau**

- Count Customer by Order
- Profit per Business Day
- Comparative Sales
- Profit Vs Target
- Finding the second order date

- Cohort Analysis

✓ **Geographic Visualizations In Tableau**

- Introduction to Geographic Visualizations
- Manually assigning Geographical Locations
- Types of Maps
- Spatial Files
- Custom Geocoding
- Polygon Maps
- Web Map Services
- Background Images

✓ **Advanced Charts In Tableau**

- Box and Whisker's Plot
- Bullet Chart
- Bar in Bar Chart
- Gantt Chart
- Waterfall Chart
- Pareto Chart
- Control Chart
- Funnel Chart
- Bump Chart
- Step and Jump Lines
- Word Cloud
- Donut Chart

✓ **Dashboards And Stories**

- Introduction to Dashboards
- The Dashboard Interface
- Dashboard Objects
- Building a Dashboard
- Dashboard Layouts and Formatting
- Interactive Dashboards with actions
- Designing Dashboards for devices
- Story Points

✓ **Get Industry Ready**

- Tableau Tips and Tricks
- Choosing the right type of Chart
- Format Style
- Data Visualization best practices

✓ **Exploring Tableau Online**

- Publishing Workbooks to Tableau Online
- Interacting with Content on Tableau Online
- Data Management through Tableau Catalog
- AI-Powered features in Tableau Online (Ask Data and Explain Data)
- Understand Scheduling

- Managing Permissions on Tableau Online
- Data Security with Filters in Tableau Online

Module 5: Python for AI

✓ Introduction To Python

- Installation and Working with Python
- Understanding Python variables
- Python basic Operators
- Understanding the Python blocks.

✓ Python Keyword And Identifiers

- Python Comments, Multiline Comments.
- Python Indentation
- Understanding the concepts of Operators
- Arithmetic
- Relational
- Logical
- Assignment
- Membership
- Identity

✓ Introduction To Variables

- Variables, expression condition and function
- Global and Local Variables in Python
- Packing and Unpacking Arguments
- Type Casting in Python
- Byte objects vs. string in Python
- Variable Scope

✓ Python Data Type

- Declaring and using Numeric data types
- Using string data type and string operations
- Understanding Non-numeric data types
- Understanding the concept of Casting and Boolean.
- Strings
- List
- Tuples
- Dictionary
- Sets

✓ Control Structure & Flow

- Statements – if, else, elif
- How to use nested IF and Else in Python
- Loops
- Loops and Control Statements.
- Jumping Statements – Break, Continue, pass

- Looping techniques in Python
- How to use Range function in Loop?
- Programs for printing Patterns in Python
- How to use if and else with Loop
- Use of Switch Function in Loop
- Elegant way of Python Iteration
- Generator in Python
- How to use nested Loop in Python
- Use If and Else in for and While Loop
- Examples of Looping with Break and Continue Statement
- How to use IN or NOT IN keyword in Python Loop.

✓ List

- What is List.
- List Creation
- List Length
- List Append
- List Insert
- List Remove
- List Append & Extend using "+" and Keyword
- List Delete
- List related Keyword in Python
- List Reverse
- List Sorting
- List having Multiple Reference
- String Split to create a List
- List Indexing
- List Slicing
- List count and Looping
- List Comprehension and Nested Comprehension

✓ Tuple

- What is Tuple
- Tuple Creation
- Accessing Elements in Tuple
- Changing a Tuple
- Tuple Deletion
- Tuple Count
- Tuple Index
- Tuple Membership
- Tuple Built in Function (Length, Sort)

✓ Dictionary

- Dict Creation
- Dict Access (Accessing Dict Values)
- Dict Get Method
- Dict Add or Modify Elements
- Dict Copy

- Dict From Keys.
- Dict Items
- Dict Keys (Updating, Removing and Iterating)
- Dict Values
- Dict Comprehension
- Default Dictionaries
- Ordered Dictionaries
- Looping Dictionaries
- Dict useful methods (Pop, Pop Item, Str , Update etc.)

✓ Sets

- What is Set
- Set Creation
- Add element to a Set
- Remove elements from a Set
- PythonSet Operations
- Frozen Sets

✓ Strings

- What is Set
- Set Creation
- Add element to a Set
- Remove elements from a Set
- PythonSet Operations

✓ Python Function, Modules And Packages

- Python Syntax
- Function Call
- Return Statement
- Arguments in a function – Required, Default, Positional, Variable-length
- Write an Empty Function in Python –pass statement.
- Lamda/ Anonymous Function
- *args and **kwargs
- Help function in Python
- Scope and Life Time of Variable in Python Function
- Nested Loop in Python Function
- Recursive Function and Its Advantage and Disadvantage
- Organizing python codes using functions
- Organizing python projects into modules
- Importing own module as well as external modules
- Understanding Packages
- Random functions in python
- Programming using functions, modules & external packages
- Map, Filter and Reduce function with Lambda Function
- More example of Python Function

✓ Decorator, Generator And Iterator

- Creation and working of decorator

- Idea and practical example of generator, use of generator
- Concept and working of Iterator

✓ Python Exception Handling

- Python Errors and Built-in-Exceptions
- Exception handling Try, Except and Finally
- Catching Exceptions in Python
- Catching Specific Exception in Python
- Raising Exception
- Try and Finally

✓ Python File Handling

- Opening a File
- Python File Modes
- Closing File
- Writing to a File
- Reading from a File
- Renaming and Deleting Files in Python
- Python Directory and File Management
- List Directories and Files
- Making New Directory
- Changing Directory

✓ Memory Management Using Python

- Threading, Multi-threading
- Memory management concept of python
- working of Multi tasking system
- Different os function with thread

✓ Python Database Interaction

- SQL Database connection using
- Creating and searching tables
- Reading and Storing con?g information on database
- Programming using database connections

✓ Reading An Excel

- Working With Excel
- Reading an excel ?le using Python
- Writing to an excel sheet using Python
- Python| Reading an excel ?le
- Python | Writing an excel ?le
- Adjusting Rows and Column using Python
- ArithmeticOperation in Excel ?le.
- Play with Workbook, Sheets and Cells in Excel using Python
- Creating and Removing Sheets
- Formatting the Excel File Data
- More example of Python Function

✔ Complete Understanding Of OS Module Of Python

- Check Dirs. (exist or not)
- How to split path and extension?
- How to get user profile detail?
- Get the path of Desktop, Documents, Downloads etc.
- Handle the File System Organization using OS
- How to get any files and folder's details using OS?

Module 6: Machine Learning

✔ Introduction To Machine Learning

- What is Machine Learning?
- Machine Learning Use-Cases
- Machine Learning Process Flow
- Machine Learning Categories

✔ Supervised Learning

- Classification and Regression
- Where we use classification model and where we use regression
- Regression Algorithms and its types

✔ Regression Algorithm

- Linear regression
- Logistic Regression
- Evaluation Matrix of Regression Algorithm

✔ Classification Algorithm

- Implementation of SVM
- Implementing KNN
- Implementing Naïve Bayes Classifier
- Implementation and Introduction to Decision Tree using CART and ID3
- Introduction to Ensemble Learning
- Random Forest algorithm using bagging and boosting
- Evaluation Matrix of classification algorithms (confusion matrix, r2score, Accuracy, f1-score, recall and precision)

✔ Optimization Algorithm

- Gradient descent
- Hyperparameter Optimization
- Grid Search vs. Random Search

✔ Dimensionality Reduction

- Introduction to Dimensionality
- Why Dimensionality Reduction
- PCA
- Factor Analysis

- Scaling dimensional model
- LDA
- ICA

✓ Unsupervised Learning

- What is Clustering & its Use Cases?
- What is K-means Clustering?
- How does the K-means algorithm works?
- How to do optimal clustering
- What is Hierarchical Clustering?
- How does Hierarchical Clustering work?

✓ Association Rules Mining And Recommendation Systems

- What are Association Rules?
- Association Rule Parameters
- Calculating Association Rule Parameters
- Recommendation Engines
- How do Recommendation Engines work?
- Collaborative Filtering
- Content-Based Filtering
- Association Algorithms
- Implementation of Apriori Association Algorithm

✓ Reinforcement Learning

- What is Reinforcement Learning?
- Why Reinforcement Learning?
- Elements of Reinforcement Learning
- Exploration vs. Exploitation dilemma
- Epsilon Greedy Algorithm
- Markov Decision Process (MDP)
- Q values and V values
- Q – Learning
- Values

✓ Time Series Analysis

- What is Time Series Analysis?
- Importance of TSA
- Components of TSA

✓ Model Selection And Boosting

- What is Model Selection?
- Need for Model Selection
- Cross Validation
- What is Boosting?
- How do Boosting Algorithms work?
- Types of Boosting Algorithms
- Adaptive Boosting

Module 7: Understanding Deep Learning for AI

✓ Introduction To Text Mining And NLP

- Overview of Text Mining
- Need of Text Mining
- Natural Language Processing (NLP) in Text Mining
- Applications of Text Mining
- OS Module
- Reading, Writing to text and word files
- Setting the NLTK Environment
- Accessing the NLTK Corpora

✓ Extracting, Cleaning And Preprocessing Text

- Tokenization
- Frequency Distribution
- Different Types of Tokenizers
- Bigrams, Trigrams & Ngrams
- Stemming
- Lemmatization
- Stopwords
- POS Tagging
- Named Entity Recognition

✓ Analyzing Sentence Structure

- Syntax Trees
- Chunking
- Chinking
- Context Free Grammars (CFG)
- Automating Text Paraphrasing

✓ Text Classification - I

- Machine Learning: Brush Up
- Bag of Words
- Count Vectorizer
- Term Frequency (TF)
- Inverse Document Frequency (IDF)

✓ Getting Started With TensorFlow 2.0

- Introduction to TensorFlow 2.x
- Installing TensorFlow 2.x
- Defining Sequence model layers
- Activation Function
- Layer Types
- Model Compilation
- Model Optimizer
- Model Loss Function
- Model Training

- Digit Classification using Simple Neural Network in TensorFlow 2.x
- Improving the model
- Adding Hidden Layer
- Adding Dropout
- Using Adam Optimizer

✓ Introduction To Deep Learning

- What is Deep Learning?
- Curse of Dimensionality
- Machine Learning vs. Deep Learning
- Use cases of Deep Learning
- Human Brain vs. Neural Network
- What is Perceptron?
- Learning Rate
- Epoch
- Batch Size
- Activation Function
- Single Layer Perceptron

✓ Neural Networks

- What is NN
- Types of NN
- Creation of simple neural network using tensorflow

✓ Convolution Neural Network

- Image Classification Example
- What is Convolution
- Convolutional Layer Network
- Convolutional Layer
- Filtering
- ReLU Layer
- Pooling
- Data Flattening
- Fully Connected Layer
- Predicting a cat or a dog
- Saving and Loading a Model
- Face Detection using OpenCV

✓ Image Processing And Computer Vision

- Introduction to Vision
- Importance of Image Processing
- Image Processing Challenges – Interclass Variation, ViewPoint Variation, Illumination, Background Clutter, Occlusion & Number of Large Categories
- Introduction to Image – Image Transformation, Image Processing Operations & Simple Point Operations
- Noise Reduction – Moving Average & 2D Moving Average
- Image Filtering – Linear & Gaussian Filtering
- Disadvantage of Correlation Filter

- Introduction to Convolution
- Boundary Effects – Zero, Wrap, Clamp & Mirror
- Image Sharpening
- Template Matching
- Edge Detection – Image filtering, Origin of Edges, Edges in images as Functions, Sobel Edge Detector
- Effect of Noise
- Laplacian Filter
- Smoothing with Gaussian
- LOG Filter – Blob Detection
- Noise – Reduction using Salt & Pepper Noise using Gaussian Filter
- Nonlinear Filters
- Bilateral Filters
- Canny Edge Detector - Non Maximum Suppression, Hysteresis Thresholding
- Image Sampling & Interpolation – Image Sub Sampling, Image Aliasing, Nyquist Limit, Wagon Wheel Effect, Down Sampling with Gaussian Filter, Image Pyramid, Image Up Sampling
- Image Interpolation – Nearest Neighbour Interpolation, Linear Interpolation, Bilinear Interpolation & Cubic Interpolation
- Introduction to the dnn module
 - Deep Learning Deployment Toolkit
 - Use of DLDT with OpenCV4.0
- OpenVINO Toolkit
 - Introduction
 - Model Optimization of pre-trained models
 - Inference Engine and Deployment process

✓ Regional CNN

- Regional-CNN
- Selective Search Algorithm
- Bounding Box Regression
- SVM in RCNN
- Pre-trained Model
- Model Accuracy
- Model Inference Time
- Model Size Comparison
- Transfer Learning
- Object Detection – Evaluation
- mAP
- IoU
- RCNN – Speed Bottleneck
- Fast R-CNN
- RoI Pooling
- Fast R-CNN – Speed Bottleneck
- Faster R-CNN
- Feature Pyramid Network (FPN)
- Regional Proposal Network (RPN)

- Mask R-CNN

✓ Introduction To RNN And GRU

- Issues with Feed Forward Network
- Recurrent Neural Network (RNN)
- Architecture of RNN
- Calculation in RNN
- Backpropagation and Loss calculation
- Applications of RNN
- Vanishing Gradient
- Exploding Gradient
- What is GRU?
- Components of GRU
- Update gate
- Reset gate
- Current memory content
- Final memory at current time step

✓ RNN, LSTM

- What is LSTM?
- Structure of LSTM
- Forget Gate
- Input Gate
- Output Gate
- LSTM architecture
- Types of Sequence-Based Model
- Sequence Prediction
- Sequence Classification
- Sequence Generation
- Types of LSTM
- Vanilla LSTM
- Stacked LSTM
- CNN LSTM
- Bidirectional LSTM
- How to increase the efficiency of the model?
- Backpropagation through time
- Workflow of BPTT

✓ Faster Object Detection Algorithm

- YOLO v3
- YOLO v4
- Darknet
- OpenVINO
- ONNX
- Fast R-CNN
- Faster R-CNN
- Mask R-CNN

✓ BERT Algorithm

- What is BERT
- Brief on types of BERT
- Applications of BERT

Module 8: Generative AI

✓ Introduction To Large Language Models

- What is a Large Language Model?

✓ LLM Architectures

- Encoders and Decoders
- Model Ontology
- Encoders
- Decoders
- Encoders-Decoders
- Architectures at a glance

✓ Prompting And Prompt Engineering

- Affecting the distribution over Vocabulary
- Affecting the distribution over Vocabulary
- Prompting
- Prompt Engineering
- In-context Learning and Few-shot Prompting
- Example Prompts
- Advanced Prompting Strategies

✓ Issues With Prompting

- Prompt Injection
- Memorization

✓ Training

- Training
- Hardware Costs

✓ Decoding

- Decoding
- Greedy Decoding
- Non-Deterministic Decoding
- Temperature

✓ Hallucination

- Hallucination
- Groundedness and Attributability

✓ LLM Applications

- Retrieval Augmented Generation
- Code Models

✓ Multi-Modal

✓ Language Agents

✓ OCI Generative AI Introduction

- OCI Generative AI Service
- How does OCI Generative AI service work?
- Pretrained Foundational Models
- Fine-tuning
- Dedicated AI Clusters

✓ Chat Models

- Tokens
- Pretrained Chat Models
- Chat Model Parameters
- Preamble Override
- Temperature
- Chat Model Parameters
- Top k
- Top p
- Frequency and Presence Penalties

✓ Demo Chat Models

✓ Demo OCI Generative AI Service Inference API

✓ Demo Setting Up OCI Config For Generative AI API

✓ Embedding Models

- Embeddings
- Word Embeddings

✓ Semantic Similarity

✓ Sentence Embeddings

✓ Embeddings Use Case

✓ Embedding Models In Generative AI

✓ Embedding Models In Generative AI

✓ Demo Embedding Model

✓ Customize LLMs With Your Data

- Training LLMs from scratch with my data?

- In-context Learning / Few-shot Prompting
- Fine-tuning a pretrained model
- Fine-tuning Benefits
- Retrieval Augmented Generation (RAG)
- Customize LLMs with your data

✓ **Fine-Tuning And Inference In OCI Generative AI**

- Fine-tuning and Inference
- Fine-tuning workflow in OCI Generative AI
- Inference workflow in OCI Generative AI
- Dedicated AI Clusters
- T-Few Fine-tuning

✓ **T-Few Fine-Tuning Process**

✓ **Reducing Inference Costs**

✓ **Inference Serving With Minimal Overhead**

✓ **Dedicated AI Clusters Sizing And Pricing**

- Dedicated AI Cluster Units
- Dedicated AI Cluster Units Sizing
- Dedicated AI Clusters Sizing
- Example Pricing

✓ **Demo Dedicated AI Clusters**

✓ **Generative AI Fine-Tuning Configuration**

- Fine-tuning Configuration
- Fine-tuning Parameters (T-Few)
- Understanding Fine-tuning Results

✓ **Demo Fine-Tuning And Custom Models**

✓ **Demo Inference Using Endpoint**

✓ **OCI Generative AI Security**

- Dedicated GPU and RDMA Network
- Model Endpoints
- Customer Data and Model Isolation
- Generative AI leverages OCI Security Services

✓ **Retrieval Augmented Generation**

- Retrieval Augmented Generation
- RAG Framework
- RAG Techniques
- RAG Pipeline

✓ **NNX Compatible**

✓ Database-Native Vector Embedding Generation

✓ Vector Index

✓ Vector Index Syntax

✓ Similarity Searches In Oracle 23i

✓ Vector Search SQL

✓ Vector Search

✓ AI Vector Search Powers Gen AI Pipelines

✓ Application Development

✓ Chatbot Introduction

- Chatbot Introduction
- Demo Chatbot

✓ Chatbot Architecture & Basic Components

- Chatbot Architecture
- OCI Generative AI and LangChain Integration
- LangChain Components

✓ Models, Prompts And Chains

- LangChain Prompt, Model and Chain Interaction
- LangChain Prompt Templates
- String Prompt Template and PromptValue
- Chat Prompt Template and PromptValue
- LangChain Models
- LangChain Models – OCI Chat Models
- LangChain Models – OCI Embedding Models
- LangChain Chains
- LangChain Chains

✓ Setting Up A Development Environment

✓ Demo Setup Development Environment

✓ Demo Prompts, Chains, And LLMs

✓ Extending Chatbot By Adding Memory

- LangChain Memory
- Memory
- Memory Chat Messages
- LangChain Memory Per User
- Demo Memory

- Demo Streamlit and Memory

✓ **Extending Chatbot By Adding RAG**

- RAG with LangChain
- Retrieval Augmented Generation (RAG) with LangChain
- Read and Split Documents
- Embed documents and store in the vector database
- Retrieve documents and send as a context to the LLM
- Demo RAG - Indexing
- Demo RAG - Retrieval and Generation

✓ **Extending Chatbot By Adding RAG + Memory**

- RAG Plus Memory
- Adding chat history as context
- Print of Response
- Demo RAG Plus Memory and Tracing with LangSmith
- Demo Evaluate Model using LangSmith
- Chatbot Technical Architecture

✓ **Deploy Chatbot To OCI Compute Instance**

- Deploy Chatbot to OCI Compute Instance (Virtual Machine)
- Demo Deploy Chatbot to VM

✓ **Deploy Chatbot To OCI Data Science**

- Deploy LangChain Application to Data Science as Model

Module 9: Prompt Engineer

✓ **Prompt Engineering Fundamentals**

- Generative AI and Large Language Models
- Define Prompt Engineering: Elements of a Prompt
- Parameters of a Prompt
- Prompt Iteration and Evaluation
- Role Prompting
- Quiz: Prompt Engineering Fundamentals

✓ **Techniques Of Prompting**

- Zero-shot Prompting
- Few-shot Prompting
- Chain-of-Thought Prompting
- Quiz: Techniques of Prompting
- Challenge: Techniques of Prompting
- Solution: Techniques of Prompting

✓ **Examples Of Prompt Engineering For Everyday Success**

- Enhancing English Language Skills with Prompt Engineering
- Managing Social Media with Prompt Engineering

- Parenting Aid with Prompt Engineering

✓ Examples Of Prompt Engineering For Software Developers

- Learning to Code with Prompt Engineering
- Digital Product Creation with Prompt Engineering
- Web Development with Prompt Engineering
- SaaS Product Development with Prompt Engineering

Module 10: ChatGPT

✓ Getting Started With ChatGPT

- Introduction to ChatGPT
- Message Types and Prompt Parameter Settings in ChatGPT

✓ Making Professional Cover Letters With ChatGPT

- The Basics of Cover Letters
- Writing Cover Letters with ChatGPT
- Cover Letters for Different Experience Levels
- Cover Letters for Different Industries and Job Roles
- Summary: Cover Letters

✓ Building Professional Resumes With ChatGPT

- The Basics of Resumes
- Creating a Resume with ChatGPT
- Updating a Resume with ChatGPT
- Resume Formatting
- Case Studies
- Summary: Resumes

✓ Writing Professional Emails With ChatGPT

- A Simple Email
- Emails for Different Scenarios
- Responding to Emails
- Summary: Emails

✓ Optimize Your Linked In Profile With ChatGPT

- Basics of a LinkedIn Profile
- Optimizing Your Profile
- Creating a Job-Specific Profile
- Summary: LinkedIn Profile

✓ Exploring Job Search Strategies With ChatGPT

- Finding Jobs by Interest and Skills
- Researching Companies and Job Titles
- Preparing for Interviews
- Summary: Job Search Strategies

| Course Projects

Domain: Education



Project Name:

AI Quiz Generator

Build an AI tool that generates topic-based quizzes, including multiple-choice questions and answers, using course content or keywords. Educators can instantly create assessments for various difficulty levels. The system ensures content relevance and adapts to different subjects using prompt-based logic.

Tool & Technology Used:

PYTHON

OPENAI API

LANGCHAIN

Domain: Healthcare



Project Name:

Medical Symptom Checker Chatbot

Develop a chatbot that accepts user symptoms as input and provides possible diagnoses, health advice, or next steps. It leverages prompt engineering and medical datasets to offer precise suggestions, improving patient engagement and preliminary self-diagnosis.

Tool & Technology Used:

PYTHON

CHATGPT

PROMPT ENGINEERING

Domain: Business Analytics



Project Name:

Sales Dashboard with Predictive Insights

Create a dynamic sales dashboard using Power BI and Excel to visualize KPIs like revenue, region-wise performance, and product trends. Integrate a machine learning model to predict next quarter's sales based on historical patterns.

Tool & Technology Used:

POWER BI

EXCEL

PYTHON

SQL

Domain: Education



Project Name:

Student Performance Tracker

Create a dashboard that displays attendance, exam scores, and engagement metrics per student/class. Highlight top performers, dropout risks, and subject-level trends for administrators.

Tool & Technology Used:

TABLEAU

EXCEL

SQL

DISCLAIMER

"Course Curriculum, Training Certificates & Projects details are subject to change without notice, based on industry standards and guidelines.

| Course Projects

Domain: Marketing



Project Name:

Email Campaign Writer

Build a tool that generates compelling marketing email templates based on product details, target audience, and campaign objectives. It personalizes tone and message structure using prompt engineering, supporting automated content pipelines for marketers.

Tool & Technology Used:

EKS

PYTHON

GPT-4

HUGGING FACE

DISCLAIMER

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e-Learning through LMS

Learning **Management System**

Our LMS (LearnPitch) is for the administration, documentation, tracking, reporting, automation, and delivery of educational courses, training programs, or learning and development programs.

Our LMS has been designed to identify training and learning gaps, using analytical data and reporting to keep you up with the class activities.

Key Features **Learning Management System**



Live Sessions with Class recordings



Get study material with Assignments.



Track your curriculum covered.



Track your class wise attendance



Share your feedback for Trainer & Training



Get your Training Certificate from LMS



| Training Certification

Earn Your **Certificate**

Your certificate and skills are vital to the extent of jump-starting your career and giving you a chance to compete in a global space.



|Croma Campus is Nasscom Certified

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|Croma Campus! Reviews



"The most rewarding part of my experience has been achieving a prestigious certification in the subject that I love. Moreover, the training offered out by the specialists are of world-class and prepares out the students for corporate world. For me Croma Campus means a lot."

"By The Students For The Students,"

Your Success is **Our Story**



Bharat

"I am fully satisfied with the excellent training services received by the expert staff at Croma Campus. I want to thank Croma Campus for providing me with the most innovative and affordable training services for learning all the software testing procedures and guidelines."



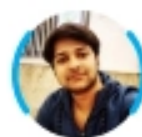
Ankit

"It was a lifetime experience for me to get trained by IT Experts of Croma Campus. What I liked most about the training was the consistent high-quality education, which was friendly and co-active. The placement department was also proactive, they keep me updated regarding new job opportunities and provide the grooming session to crack the interview. At last, I would like to thank all faculty members of Croma Campus for their immense help and support."



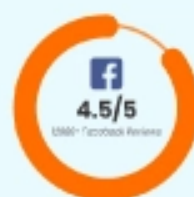
Umesh

"Without any second thought, I will give Croma Campus 10/10. Their placement department is highly proactive. I remember they started scheduling interviews for me from the very next day when I told them my course has been completed. These people are doing a phenomenal job and I highly recommend Croma Campus to everyone."



Shams Khan

"Croma Campus is doing a phenomenal job in the IT training industry. The reason why I decided to join their training program was that they provide quality training at very a nominal price. Plus, the online training mode was also a factor due to which I decided to join the training program of Croma Campus as I didn't want to attend physical classes."



|Meet Our Team



Sales Team

Our Sales team is highly passionate, emphatic, positive attitude, great listening skills, ability to deliver quick solutions, and they are multitasker too. Our team always remains up-to-date about all the latest technologies and market trends. With effective communication skills, they always work to deliver the right information to customers when it is needed.

Product Team

Our product team is highly functional and collaborative working together to achieve the common outcome of designing exceptional digital experiences. Each of our members is a contributor to help us achieve success in long-run. Sitting at the high-end of technology and innovation, team helps to deliver high-end customer experiences and always comes out with a big idea as a game-changing plan.

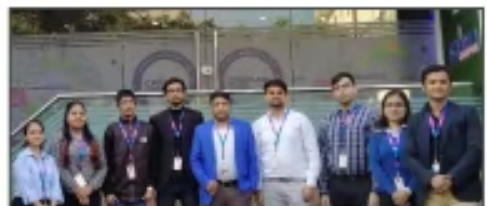


Marketing Team

Our Marketing team works as gladiators and helps us to achieve business success in all possible ways. They are included in almost everything either it is building a brand, creating brand awareness, promoting products or services, delivering trailblazing customer experiences or increasing engagement at public forums. They are the true backbone of the Company.

Content Team

Our content team is responsible for ideation, creation, optimization, and distribution of content throughout the company. The team always starts its work with a strategy, how to create high-quality contents, and how to promote or share the content. Our in-house content team help us to produce all types of contents either they are educational content pieces, marketing content, SEO content, or any other forms too.



Customer Access Team

This is the team that has actually been taken up us from reactive state to a pro-active state. The team utilizes high-valued solutions to satisfy customers in all possible ways. It is truly said that no company can succeed if your customers are not satisfied. And our customer success team is dedicatedly working to keep all the customers satisfied and we always consider our customer feedback on priority.

HR Team

Our HR team is committed to provide high-end solutions to employees as they require. Our HR team has the right skills and knowledge to make sure that the HR department can always be legally and strategically successful. They know how to keep employees motivated all the time with the best HR policies and fun activities too from time to time.

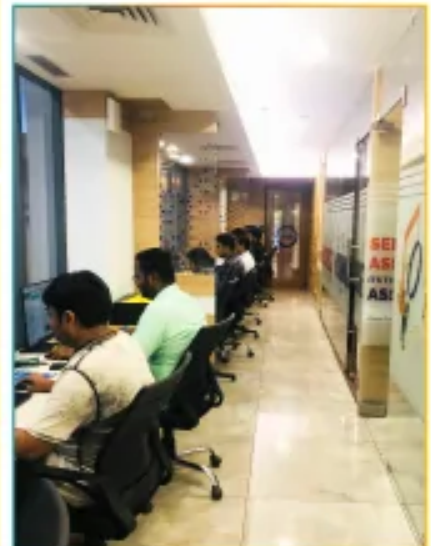


| Glimpse Of Our Office

Look **Who We are**

Our office's infrastructure comprises all the necessary software and network resources that are required to deliver IT & Design, Human Resources, Digital Marketing, and training services.

We are well-equipped with bright designed work bays for employees and managers having separate cabins with spacious cafeteria and training classrooms.



About Croma Campus

“Our Mission is to Build Nation through Education & Beyond Limitation.”



#1 Asia's Leading
Edtech Company

Croma Campus Training & Development Private Limited is an education platform providing rigorous industry-relevant programs designed and delivered in collaboration with world-class faculty, industry & Infrastructure. In the past 14 years we have trained 18000+ candidates and out of which we are able to place 12000+ professionals in various industries successfully.

We Are
Affiliated
With Different
Partners



We're Here to Help –
Reach Out to Our Global Offices

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