(Since 2015)

Dakshah Analytics Academy

We Don't Just Train, We Build Careers!!

About Us

Nipun Analytics is one of the leading Data Science training institute led by group of dynamic industry experts. We help individuals to build data skills that are necessary to transform their career into Analytics and Data Science.

We have helped 3000+ individuals from across the world build job-ready skills, master sought-after technologies like Excel, SQL, R, Python, Power BI, Tableau and build the foundation for a successful career in Data Science.

Courses

Data Analysis & DBMS Programming

- Excel Base and Advanced (VBA)
- MS Access
- SQL server
- SAS Base and Advanced
- R Programming
- Python Programming
- Bigdata/ Spark Scala

Data Analysis & Data Visualization

- Tableau
- Power BI
- Qlikview

Data Science & Machine Learning

- Statistics and Mathematics Foundation
- Advanced Excel Analytics
- R Predictive Modeling and Machine Learning & AI
- Python Predictive Modeling and Machine Learning & AI (Keras/TensorFlow)

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Complete a course with us and get a Job – Guaranteed!

Track Record

Since 2015, Nipun Analytics has been producing industry ready up-skilled professionals, who are successfully placed and working in various industries (IT, FMCG, Banking and Finance, E-Commerce, Consumer Durable, Pharma, Fertilizer, Manufacturing & Production Unit, Building Material(Cement, Paint, Plywood, Tiles etc.) Retail and BPO/KPO) **and domains (**Banking, Digital Marketing, Information Security, Production & Maintenance, Sales & Marketing, Operations, IT, Logistics & Supply Chain, Accounts / Commercial, Human Resources, Finance, Administration and Engineering).

We Offer

- ❑ Professional, personalized career guidance.
- ❑ Training till you get placed.
- ❑ 1-on-1 tuitions with custom approach for individuals.
- ❑ Real time case studies and assignments.
- ❑ 100% job-oriented courses and placement assistance till you get placed
- ❑ Career readiness resources – complete resume building, profile creation on LinkedIn & other job portals, networking & referrals.
- ❑ Extremely affordable fee structure
- ❑ Career transition with an average of 50%+ Salary Hike

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Why
Data Science?

On 20th June 2022, Analytics India Magazine has published a report called 'Analytics India Industry Study 2022'. Here are some key insights about Indian Analytics Market:

- Analytics market in India is projected to grow at a staggering CAGR of ~27%.
- Currently, Analytics market in India is worth around $60 Billion in 2022 and it is **projected to grow to around $200 Billion by 2027. In other words, it is going to become 3x the current value in the next 5 years!**
- BSFI, Pharma and Retail Industry are the top 3 sectors utilizing analytics.
- People with **0-5 years of experience** in analytics constitute of nearly **one third of the workforce** in the industry right now.
- **49% of the people working in analytics are from engineering background**. Only 2% of these are from top engineering colleges
- Top 5 Cities by Market Share in Analytics space – Bangalore, Delhi, Mumbai, Hyderabad and Chennai.

Take away from this report

We are living in the golden era of analytics. This is the best time to start or switch your career into data Science and analytics as the demand of analytics professionals is on the rise.

51% of people working in this domain are from non – technical background. This means that people from any educational or professional background can get into data science and analytics.

Freshers and professionals with less work experience has very good opportunity to get into data science and analytics.

Analytics jobs are among the highest paid jobs in the current market.

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Who can apply for the course?

- Freshers and final year individuals who aspire to build their career in the field of Data Analytics and Data Science.
- Individuals (from any educational background) with any bachelor's or master's degree.
- IT professionals (from any professional background) looking for a career transition as Data Analyst, Data engineer, Data Base Engineer, Data Visualization Specialist, Data Scientists, etc.
- Developers and Project Managers from different fields willing to explore Data Science.
- Professionals aiming to move ahead in their Data Analytics and Data Science domain.

As a new-age training institute with a global footprint, we at Nipun Analytics offer different levels of courses from beginner to advanced, targeting both fresh graduates and working professionals. Our courses aim to train and prepare students by 1-on-1 expert coaching, goal-oriented learning plans and well curated custom training contents.

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Course Content

Microsoft Excel

Microsoft Excel is a spreadsheet program used to record and analyze data. We will make you learn most widely used spread sheet skills and master the advance excel skills using tables, pivot tables, charts, graphs, filtering, sorting, conditional formatting, dashboarding, data processing, etc. with real time scenarios and datasets. Join this course to stay on top of your data with must have Microsoft Excel skill.

Module 1 - **EXCEL BASICS**

- Data Entry, Data Editing, and Number Formatting
- Data Formatting
- Working with Cells and Ranges in Excel
- Managing Worksheets

Module 2 - **EXCEL ESSENTIALS**

- Introduction to Excel Tables
- Auto-fill, Custom Lists, and Flash Fill
- Number Formatting in Excel

Module 3 - **EXCEL FORMULAS**

- Introduction to Excel Tables
- Auto-fill, Custom Lists, and Flash Fill
- Number Formatting in Excel

Module 4 - **DATA ANALYSIS**

- Named Ranges in Excel
- Data Validation in Excel
- Data Sorting and Filtering in Excel
- Using Conditional Formatting in Excel

Module 5 - **INTRODUCTION TO EXCEL CHARTING**

- Introduction to Excel Charting
- Advanced Excel Charting Examples
- Dynamic Charts in Excel

Module 6 - **PIVOT TABLE**

- Introduction to Pivot table
- Using Slicers
- Creating calculated table
- Creating multiple pivot table from one
- Classic pivot table option
- Advance pivot table options
- Totals and Subtotals
- Looking behind the scenes data of your pivot table
- Refreshing your data
- Advanced Pivot Table Tips and Tricks

Module 7 - **OTHER IMPORTANT EXCEL TOPICS**

- Reporting
- Dashboarding
- Protection in Excel
- Introduction to Macros and VB Editor
- Printing
- Sharing

Course Content

Excel VBA

Visual Basic for Applications (VBA) is a powerful language built on top of popular Microsoft Office applications like Excel, Access, and Outlook. It allows developers to write procedures called macros that perform automated actions. Anything that you can do in Excel, you can automate with VBA.
Over the course, we'll cover VBA from the ground up, beginning with the fundamentals and proceeding to advanced topics .

Module 1 - **FUNDAMENTALS OF THE EXCEL OBJECT MODEL**

- Object Oriental Programming
- Collection Object in Real Life
- Objects As Properties
- The Excel Object Model
- Access Object by Name
- Access Default Properties
- The Name Property on Workbook and Worksheet Objects
- Objects and Methods : Methods with arguments, Method without arguments, Method with multi arguments, The Object Browser, How to call a procedure, The TypeName method, Variable Declarations, Multiple Variable Declarations, The Option Explicit Syntax, The Byte, Integer and Long Data Type, Numeric Data Types, Mathematical Operators, Boolean operator, Date Data Types, Quiz for variable and class declarations

Module 2 - **PROCEDURES AND ADVANCED OBJECT-ORIENTED CONCEPTS**

- Procedure : Variable Scope, Call a procedure from another procedure, Procedure access level – Private, Public, When to use Exit Sub, Constraints, Predefined Constraints
- Advance Object Oriented Programming: Application Object, The Application.Display Alert, Worksheet Object
- Range.Select Method
- Value and Text Property
- Formula and R1C1 Properties
- Range Offset Property
- Range.Resize Property
- Cells
- Get Last row of Data in a Worksheet

Module 3 - **ADD LOGIC TO YOUR PROGRAM**

- Repeat a task
- For Next Loop
- Step through all items of a collection object

Course Content

- For Each Loop
- Do Loop
- If then else statement
- Case statement
- Managing Workbook elements and data .
- Write a value in a cell
- Cut Copy Paste cell data
- Find values in cells
- Refer to cell using the offset functions
- Concatenating text strings
- Return part of a string
- Managing worksheets with VBA
- Managing workbooks with VBA

Module 4 - **EVENT HANDLING**

- Run a procedure when you open, close, or save a workbook
- Run a procedure when a cell range changes
- Trigger a procedure using a specific key sequence
- Worksheet_Activate event
- Worksheet_Open event
- Worksheet_Change event
- Application.EnableEvents method
- Worksheet_SelectionChange event
- Other Worksheet events

Module 5 - **USER FORMS**

- Label and TextBox Control
- Naming convention
- Design Aesthetics
- Event Procedure to Control
- Activate a UserForm from a procedure
- The Initialize Event
- ListBox Control: Wire up a form, React to user selection, Selecting Multiple Items
- Combobox
- Checkbox

Module 6 - **CAPSTONE PROJECT**

Course Content

Without exception, SQL (Structured Query Language) is used in almost all the projects in one way or another. Thus, learning it is very useful for anyone who wants to have a career in the online world. But for a Data Analyst (or Data Scientist) it's a definite must, since SQL is one of the most common data languages, too. Let's see why: SQL is easy to learn, SQL performs extremely well on bigger data sets (even a few million lines), SQL has been around for more than 40 years, and it will be here for at least the next 40

Module 1 - **SQL INTRODUCTIONS**

- Table Creation: Design, Refinement, Building SQL Schema Statement
- Populating and Modifying Tables: Inserting Data, Updating Data, Deleting
- Select: Table Alias, From Clause, Where Clause
- Filtering records: Condition Evaluation, Building condition, Range conditions, Membership condition

Module 2 - **QUERYING MULTIPLE TABLE, PRIMARY KEY AND FOREIGN KEY**

- Nonunique Primary key
- Non-existent Primary key
- Joins: Cartesian Product, Inner Join, Outer Join, Full Outer join

Module 3 - **WORKING WITH SETS AND DATA GENERATION**

- Set Theory Primer
- Union
- Intersect
- Except
- String generation
- String Manipulation
- Working with Numeric data: Performing Arithmetic Functions, Controlling number precision, Handling Signed Data
- Dealing with date and time functions: Dealing with time zones, Generating temporal data

Module 4 - **GROUPING AND AGGREGATES**

- Implicit and Explicit Groups
- Counting Distinct Values
- Using Expression
- Handle Null values
- Generating Groups: Single Column Grouping, Multicolumn Grouping, Grouping via expression, Grouping Rollups

Module 5 - **SUBQUERIES**

- What is a Subquery
- Subquery Types
- Correlated Subqueries
- Noncorrelated Subqueries
- Exists Operator
- Subquery as a data source
- Subquery as a filter condition
- Subquery As Expression Generators

Course Content

Module 6 - **CONDITIONAL LOGIC**

- What is Conditional Logic
- The Case Expression: Searched Case Expression, Simple Case Expressions
- Case Expression Examples: Result Set Transformations, Selective Aggregations, Checking for Existence, Division by Zero Errors, Handling Null Values

Module 7 - **VIEWS**

- What are Views
- Data Security
- Data Aggregations
- Hiding Complexity
- Joining Partitioned Data
- Updatable Views: Updating Simple Views, Updating Complex Views

Module 8 - **WINDOWS FUNCTIONS**

- Ranking: ROW_NUMBER(), RAK(), DENSE_RANK(), PERCENT_RANK(), NTILE()
- VALUE, LAG(), LEAD(), FIRST_VALUE(), LAST_VALUE(), NTH_VALUE()

Module 8 - **CAPSTONE PROJECT**

Course Content

Tableau

Tableau is a visual analytics platform transforming the way we use data to solve problems—empowering people and organizations to make the most of their data. It helps people to see patterns in data and enables them to take decisions better and faster.

One of the advantage of Tableau is its visual features. Visual best practices are built in, so even if your end users know little about how to present information effectively, Tableau can go a long way automatically to helping ensure reports are both informative and eye catching, and present information in an understandable way.

Module 1 – **BUILDING BLOCKS**

- Tableau products
- Versions
- Pricing
- Landing page
- Data source page
- Connecting to data - Basics
- Data types
- Editing Metadata and saving data sources
- Editing Data connections and data sources
- Workspace area
- Auto-generated fields
- File Types
- Dimension aggregation and Measure aggregation
- Discrete vs continuous
- Granularity
- Incremental refreshes

Module 2 – **ORGANIZING DATA**

- Sorting
- Folders
- Hierarchy
- Group I - Dimension
- Group II - Dimension
- Group III - Measures
- Filters
- Filter IV - only relevant values
- Filter V - Context filter
- Filter VI - Hierarchical filter
- Query Pipeline
- Data Source and Extract filter

Module 3 – **CHART TYPES**

- Text Table
- Highlight Table
- Heat Map
- Scatter Plot
- Tree Map
- Bar in Bar
- Combined Axis
- Dual Axis
- Gantt Chart
- Bullet Chart
- Pie Chart
- Donut chart
- Symbol Map
- Filled Map

Course Content

Module 4 – **TABLE CALCULATIONS (TC)**

- Different types of TC
- Quick TC
- TC Scopes
- Options in Edit TC
- Explore Analysis menu
- Grand Totals & Sub totals

Module 5 – **INTERACTIVITY**

- Dashboard Actions and Filters
- Parameters - Various use cases of Parameters, Parameter Action, Parameter Action use cases
- Sets - Set I – Static, Set II – Dynamic, Set III - Dynamic with Parameter, Combined Set, Set Action, Proportional Brushing using Set Actions use case

Module 6 – **FUNCTIONS**

- String functions
- Date Functions
- Logical Functions
- Number Functions
- User Functions

Module 7 – **LOD**

- Fixed - Use Cases
- Include - Use Cases
- Exclude - Use Cases

Module 8 – **COMBINING DATA**

- Union
- Join
- Blending
- Join vs. Blend

Module 9 – **DASHBOARDING**

- Sizing
- Dashboard Designing
- Finalizing KPIs
- Dashboard Formatting
- Working in shared environment
- Making efficient dashboard
- Data visualization best practices

Course Content

Microsoft Power BI

Microsoft Power BI is the most in demand business intelligence suit that can help in visualizing data and sharing insights. This course covers beginning to advance topics which will make you proficient in connecting data sources, transforming data, building complex data models, great looking highly intuitive reports & dashboards and optimization. You will get to work on real time scenarios and real-life business data from highly experienced industry experts.

Module 1 - **INTRODUCTION**

- Introduction to Power BI
- Power BI Components
- Power BI pricing structure
- Architecture of Power BI
- Building blocks of Power BI
- Introduction of Power BI Desktop
- Installation of Power BI Desktop
- The key features of Power BI workflow
- Process of creating reports in Power BI

Module 2 - **DATA EXTRACTION & DATA TRANSFORMATION**

- Data sources in Power BI
- Data importing - from flat file (.csv and .txt), database file (.xlsx and .accdb), Database connection (ODBC and OLEDB), Web files
- Direct Query vs Import Mode
- Introduction of power query editor
- Advance editor
- Formatting and Transforming data using Power Query Editor
- Understanding Data types
- Data profiling & data quality check
- Working with Parameters
- Merge Query
- Append Query
- Applied steps (query settings)
- Transpose
- Pivot & Un-pivot of data
- Custom columns
- Conditional columns
- Replace data in the tables
- Split columns
- Move columns & sorting of data
- Detect data type, count rows & reverse rows
- Promote rows as column headers
- Hierarchies in Power BI
- M query

Module 3 - **DATA MODELLING & DAX QUERIES**

- Introduction of relationships
- Creating relationships
- Use of inactive relationships
- Cross filter direction
- Cardinality
- Introduction of DAX
- DAX syntax and uses
- DAX functions
- Context in DAX – Row Context and Filter Context
- Calculated columns using DAX

Course Content

- Measures using DAX
- Calculated tables using DAX
- Learning about table, information, logical, text, iterator,
- Time intelligence functions (YTD, QTD, MTD)
- Cumulative values, calculated tables, and ranking and
- rank over groups
- Date and time functions
- DAX advanced features

Module 4 - **DATA VISUALIZATION**

- Power BI Desktop visualization
- Page layout & Formatting
- Power View and Power Map
- Formatting and customizing visuals
- Visualization interaction
- Custom visualization in Power BI
- Top-down and bottom-up analytics
- Drill down
- Drill through
- Page navigations
- Bookmarks
- Selection pane to show/hide visuals
- Comparing volume and value-based analytics
- Combinations charts (dual axis charts)
- Filter pane
- Slicers
- Use of Hierarchies in drill down analysis
- Visualizations best practices
- Monitoring performance of report using Performance analyzer
- Power BI Q&A (Natural Language Query visual)
- Sync slicers
- Tooltips & custom tooltips
- Conditional formatting on visuals
- Geographical data visualization using Maps

Module 5 - **POWER BI SERVICE**

- Introduction to Power BI Service
- Introduction of workspaces
- Creating & Configuring Dashboards
- Reports vs Dashboards
- Building workspace Apps
- Sharing reports & dashboards
- configure subscriptions and data alerts
- Paginated report and Introduction to Power Q & A

Module 6 - **POWER BI SERVICE**

- Getting to understand Power BI Desktop settings
- Aggregating data from multiple data sources
- Power BI Service settings
- Power BI Admin Portal
- Administration activities
- Scheduling auto data refresh
- Managing groups, row-level security, datasets, reports,
- and dashboards
- Power BI usage analysis
- Introduction of Office 365 admin activities
- Introduction of Power BI Premium
- Power BI Premium per user
- Power BI Premium features

Course Content

Module 7 - **POWER BI ADVANCE TOPICS**

- Power BI Desktop visualization
- Page layout & Formatting
- Power View and Power Map
- Formatting and customizing visuals
- Visualization interaction
- Custom visualization in Power BI
- Top-down and bottom-up analytics
- Drill down
- Drill through
- Page navigations
- Bookmarks
- Selection pane to show/hide visuals
- Comparing volume and value-based analytics
- Combinations charts (dual axis charts)
- Filter pane
- Slicers
- Use of Hierarchies in drill down analysis
- Visualizations best practices
- Monitoring performance of report using Performance analyzer
- Power BI Q&A (Natural Language Query visual)

Course Content

QlikView

QlikView is a powerful tool in the field of business intelligence and analytics. It is an in memory, business discovery tool. QlikView helps big and small organizations in data discovery and interactive dashboard preparation for decision support.

Module 1 - **INTRODUCTION BI- QLIKVIEW**

- Data Entry, Data Editing, and Number Formatting
- Data Formatting
- Working with Cells and Ranges in Excel
- Managing Worksheets
- Features of QlikView
- Pros and cons of QlikView
- QlikView navigation
- Concept of Association in QlikView

Module 2 - **STARTING OF QLIKVIEW(QV)**

- Installation of Qlikview
- How to start the QlikView (QV)
- Script Edit (Cntrl +E)
- Reload (Cntrl +R)
- Loading Data from files
- Creation of QVD file
- Load and Store of QVD file in QlikView(QV)

Module 3 - **QVD FILES**

- Purpose
- Create QVD files
- Reading Data from QVD files H

Module 4 - **JOINS IN QLIKVIEW**

- How to use joins in QlikView(QV)
- Left, Right, Inner, Outer

Module 5 - **CONCEPT OF DSN**

- What is DSN
- How to create the DSN
- ODBC and OLEDB
- Loading Data from Database
- Loading Data from QVDs

Module 6 - **STAGING STRUCTURE (ARCHITECTURE)**

- What is staging
- What is Folder Structure
- Why it is necessary
- Standard folder Structure

Module 7 - **OBJECTS IN QLIKVIEW(QV)**

- What is Object
- Types of Objects
- Properties of Objects
- Discussion on List Box object
- Discussion on Statistics Box object
- Discussion on Multi Box object
- Discussion on Current Selection Box Object
- Input Box Object
- Button Text Object
- Line/Arrow
- Slider/ Calendar
- Bookmark Object
- Search Object
- Container Object

Course Content

Module 8 - **CHARTS IN QLIKVIEW**

- Introduction Chart Properties
- Bar Chart
- Line Chart
- Combo Chart
- Radar Chart
- Scatter Chart
- Grid Chart
- Pie Chart
- Funnel Chart
- Block Chart
- Gauge Char
- Pivot Table
- Straight Table

Module 9 - **QLIKVIEW APPLICATIONS**

- Look up different QlikView Applications
- Dashboard

Module 10 - **SYNTHETIC KEY**

- What is Synthetic Key
- How the Synthetic Key generated
- How to remove the Synthetic Key
- What is Circular Reference
- How to remove Circular Reference

Module 11 - **EDIT SCRIPT DIALOG**

- SET and LET statement
- Table Viewer

Module 12 - **MASTER CALENDAR**

- Calendar Creation
- Purpose of Calendar
- Date and Time function
- Concept of Autogenerate() function

Module 13 - **VARIABLES | CONDITIONS | SET ANALYSIS**

- What is Variable
- Why it is uses
- Variable declaration
- Conditional Expression
- If …….Else statement
- Nested If …….Else statement
- Set Analysis
- Use of Set Analysis Syntax
- Direct Set and Indirect Set

Module 14 - **OTHER CONCEPTS**

- Apply map
- Keep
- Wild match
- Exists
- Incremental Load Concept
- Introduction to Incremental Load
- Use of Incremental Load
- Insert only
- Insert update
- Insert Update and Delete

Course Content

Python

This Python tutorial is a one-stop programming guide for all beginners. It can help you learn Python starting from elementary to advanced levels in simple and easy steps. Python is very intuitive and easy to learn. It is also one of the most preferred programming languages for working in Data Analytics and Machine Learning domains.

TIOBE index also ranked it as the second most popular programming language of 2020. And its usage has increased by 2% from the last year. Hence, you took the right decision to learn Python.

Module 1 – **PYTHON LANGUAGE FOUNDATIONS**

- Variables and Names
- Strings and Text
- Print Statements
- Numbers and Math

Module 2 – **PYTHON FUNDAMENTALS - 2**

- How to provide user inputs
- Parameters and Unpacking Variables
- Functions
- Passing parameters and return types
- Prompting and Passing

Module 3 – **FUNCTIONS AND LOOPS**

- Functions and Variables
- Functions and files
- Dictionary
- Looping through Dictionary
- List
- If , else, elif

Module 4 – **STORING DATA IN FILES AND EXCEPTION HANDLING**

- Reading Files
- Reading and Writing Files
- Exception Handling
- Exception while reading files
- Advanced user input and handle exceptions

Module 5 – **OBJECT ORIENTED PROGRAMMING -1**

- Modules
- Class and Objects
- Is-A, Has-A
- Inheritance
- Composition
- Class Hierarchy and Class Maps
- Top Down and Bottom-up Design concepts

Course Content

Module 6 – **OBJECT ORIENTED PROGRAMMING - 2**

- Inheritance refresher
- Implicit Inheritance
- Override explicitly
- super() and __init__

Module 7 –DATA ANALYSIS IN PYTHON

- Read tabular data
- Select a Pandas Series
- ODBC and OLEDB
- Rename Columns in Pandas Dataframe
- Remove Columns
- Sort Pandas DataFrame

Module 8 – **INTERMEDIATE PANDAS CONCEPT**

- Filtering rows in Pandas Dataframe
- Apply multiple Filtering conditions
- String methods
- Change the data types of a Pandas Series

Module 9 – **AGGREGATION FUNCTIONS IN PANDAS**

- Group By in Pandas
- Axis Parameters
- Explore Pandas Series and Dataframe
- loc, iloc and ix functions to filter data
- Pandas Index – Basics
- Pandas Index - Advance

Module 10 – **ADVANCE DATA ANALYTICS USING PANDAS**

- Finding missing values in Pandas
- Handling missing values in Pandas
- Inplace parameters
- Select a subset of the dataframe
- Make dataframe smaller
- Working with dummy variables
- Date and time functions in Pandas
- Multi Index on a pandas dataframe

Module 11 – **CAPSTONE PROJECT**

- Analysis Sales Data
- Create Report Summary
- Identify trends and patterns in data
- Data Visualizations using matplotlib and Project Summary and findings

Course Content

R Programming

R is a high-level statistical language and is widely used among statisticians and data miners to develop statistical applications. This course will be your guide, taking you through different programming aspects with R.

You will learn to work with powerful R tools and techniques. You'll be able to boost your productivity with the most popular R packages and tackle data structures such as matrices, lists, and factors. You'll see how to create vectors, handle variables, and perform other core functions. You'll be able to tackle issues with data input/output and will learn to work with strings and dates.

Module 1 – **INTRODUCTION TO R PROGRAMMING**

- How to run R code
- Introduction to functions
- Variable Scope
- Default Arguments
- R Data Structures
- Vectors, the R Workhorse
- Character Strings
- Matrices
- Lists
- Data Frames
- Classes
- Regression Analysis example

Module 2 – **VECTORS**

- Scalars, Vectors, Arrays and Matrices - Adding and Deleting Vector Elements, Obtaining the Length of a Vector and Matrices and Array as Vectors
- Declarations
- Recycling
- Common Vector Operations
- Vector Arithmetic and Logical Operator
- Vector Indexing
- Generating Useful Vectors with the : Operator
- Generating Vector Sequences with seq()
- Repeating Vector Constraints with rep()
- Using all() and any()
- Vector Operations
- NA and NULL() values
- Filtering data
- Generating Filtering Indexes
- Filtering with the subset() functions
- The Selection Function which()
- A Vectorized if-then-else: the ifelse() statement
- Testing Vector Equality
- Vector Element Names
- More on c()

Course Content

Module 3 – **IMPORTANT LIBRARIES IN R**

- Packages for R
- Tidyverse Library
- Piping commands with %>%
- Sample Dataset
- Importing data from Excel
- Data Visualization - Using colors in R, Creating Bar Charts, Creating Histograms, Creating box plots, Creating scatterplots, Creating line charts and Creating cluster charts

Module 4 – **DATA WRANGLING AND POPULATING A DATA FRAME**

- Selecting cases and subgroups
- Recoding variables
- Computer new variables
- Data Analysis - Computing Frequencies, Computing Descriptive, Computing Correlations, Computing Linear Regression and Computing contingency tables
- Creating Tidy Tables
- Using tibbles
- Using data.table
- Converting data from wide to tall
- Converting data from tall to wide
- Converting data from tables to rows
- Working with dates and time
- Working with list data
- Working with XML data
- Working with JSON data
- Working with categorical variable
- Filtering cases and subgroups

Module 5 – **DATA RECORDING TECHNIQUES**

- Recording categorical data
- Recording quantitative data
- Transforming outliers
- Creating scale score by counting
- Creating scale score by calculating averages

Module 6 – **CAPSTONE PROJECT**

Course Content

Machine Learning

Machine learning is an application of AI that enables systems to learn and improve from experience without being explicitly programmed. Machine learning focuses on developing computer programs that can access data and use it to learn for themselves.

Like how the human brain gains knowledge and understanding, machine learning relies on input, such as training data or knowledge graphs, to understand entities, domains and the connections between them. With entities defined, deep learning can begin.

The machine learning process begins with observations or data, such as examples, direct experience or instruction. It looks for patterns in data so it can later make inferences based on the examples provided. The primary aim of ML is to allow computers to learn autonomously without human intervention or assistance and adjust actions accordingly.

Module 1 - **WORKING WITH TEXT DATA AND FEARURE ENGINEERING IN SCIKIT LEARN**

- Perform basic workflow for machine learning with text
- Extract features from unstructured data using Count Vectorization
- Build a Multinomial NB model for text classification
- Gather insights
- Model evaluation using – accuracy_score, confusion_matrix, Roc_auc_score
- Compare Multinomial NB with Logistic Regression
- Create test datasets from Text files using Numpy and Pandas libraries.
- Unicode Basics
- Error Handling

Module 2 - **IMPLEMENT SENTIMENT ANALYSIS USING NATURAL LANGUAGE PROCESSING TECHNIQUES**

- What is staging
- What is Folder Structure
- Why it is necessary
- Standard folder Structure

Module 3 – **USING REGULAR EXPRESSION TO FIND PATTERN IN TEXT DATA**

- Extract text from messy unstructured data using regular expression
- Python functions and library for regular expression
- Rules of regular expression
- Search with research
- Metacharacters
- Greedy and lazy quantifiers
- Match groups
- Character classes

Course Content

- Alternative character class
- String substitution with re.sub
- Anchor
- Option Flags
- Efficiently searching for multiple matches with re.findall
- Improving performance with re.compile
- Writing readable regular expressions with re.VERBOSE

Module 4 – **WORKFLOW FOR A TEST-BASED DATA SCIENCE PROBLEM**

- Feature Engineering - Data exploration and visualization, Feature engineering using Pandas, Custom tokenization using regular expression and Multi-class classification
- Model evaluation - train-test split, cross-val score and DummyClassifier
- Search for optimal tuning parameters using GridSearchCV
- Chaining steps into a Pipeline
- Making predictions for out-of-sample data

Module 5 - **ADVANCED MACHINE LEARNING TECHNIQUES**

- Using a Pipeline for proper cross-validation
- Tuning a Pipeline with GridSearchCV
- Efficiently searching for tuning parameters using RandomizedSearchCV
- Stacking sparse and dense feature matrices using SciPy
- Combining the results of multiple feature extraction processes using FeatureUnion
- Building multi-level pipelines and feature unions
- Building custom transformers using FunctionTransformer
- Improving classifier performance through ensembling
- Unsupervised document clustering using cosine similarity
- Basic strategies for model stacking

Module 6 - **CAPSTONE PROJECT**

Course Content

Deep Learning

Deep learning (DL) is the type of machine learning (ML) that resembles human brains where it learns from data by using artificial neural networks. Just like human brains, these deep neural networks learn from real life examples. In a few cases it has surpassed human intelligence

DL uses multiple neural network layers to process larger amounts of data and predict results with high accuracy. It has become the industry standard as it is now used in self-driving cars, fraud detection and forecasting weather.

Module 1 – F**UNDAMENTAL OF MACHINE LEARNING AND NEURONS**

- Machine learning concepts
- Classification Theory
- Regression Theory
- The Neuron
- How does your code “learn” from data?
- Make Predictions
- Saving and Loading a Model
- What will Keras solve?

Module 2 – F**EED FORWARD ARTIFICIAL NEURAL NETWORKS**

- Artificial Neural Networks Section Introduction
- Forward Propagation
- Geometric Picture
- Activation Functions
- Multiclass Classifications
- Images representation
- Code Preparations (ANN)
- ANN for image classification
- ANN for regression analysis

Module 3 – **CONVOLUTIONAL NEURAL NETWORKS**

- What is Convolution?
- Convolution on color Images
- CNN Architecture
- CNN Code Presentation
- CNN for MNIST
- Data Augmentation
- Batch Normalization
- Improve the CIFAR-10 Results
- RNN
  a) Sequence data
  b) Forecasting
  c) Autoregressive Linear Model for Time Series Data
  d) Linear model result evaluation
  e) Recurrent Neural Networks
  f) RNN for Time Series Prediction
  g) Paying attention to shapes
  h) GRU ad LSTM
  i) RNN for image classification

Course Content

Module 4 – **NATURAL LANGUAGE PROCESSING**

- Embedding
- Code Preparation for NLP
- Text Processing
- Text Classification with LSTM
- CNN for text
- Text Classification with CNN

Module 5 – CAPSTONE PROJECT

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