Certified
AI & ML BlackBelt+
Program

A comprehensive certified program that combines the power of
Data Science, Machine Learning & Deep Learning.

Analytics Vidhya

Course Content

- Introduction to Data Science and Machine Learning
- Python for Data Science
- EDA and Statistics
- Data Manipulation and Visualization
- Build your First Predictive Model
- Evaluation Metrics
- Build your First ML Model: k-NN
- Selecting the Right Model
- Linear Models
- Dimensionality Reduction (Part -1)
- Decision Tree
- Feature Engineering
- Working with Text Data
- Naïve Bayes
- Multiclass and multilabel
- Basics of Ensemble Techniques
- Hyperparameter Tuning
- Support Vector Machine
- Working with Image Data
- Unsupervised Machine Learning Methods
- Working with large Datasets: DASK
- Automated Machine Learning
- Neural Networks
- Model Deployment
- Interpretability of ML models

Overview

Machine Learning is re-shaping and revolutionizing the world and job functions globally. It is no longer a buzzword – many different industries have already seen automation of business processes and disruptions from Machine Learning. In this age of machine learning, every aspiring data science is expected to upskill themselves in machine learning techniques & tools and apply them in real-world business problems.

Case Study

- NYC taxi trip duration prediction
- Customer churn prediction
- Web Page Classification
- Malaria Detection

Pre-requisites
This course requires no past knowledge about Data Science or any tool.

Instructors

- Kunal Jain
- Pranav Dar
- Sunil Ray
- Aishwarya Singh

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Course Content

- Introduction to Structured Thinking
- Structured Thinking for Data Science
- Role of Structured Thinking in Data Science Lifecycle
- Understanding and Defining the Problem Statement
- Hypothesis Building
- Data Extraction and Cleaning
- Data Modelling
- Post-Modelling Steps
- Structured Thinking for Communications

Overview

Structured Thinking and Communication is one of the important skill data science managers and customers value today.

Sadly, there aren't many resources which help people in this area. This course is created with an aim to address this need and provide people with frameworks and best practices on structured thinking and communications.

Case Study

- Bank with high credit charge offs

Pre-requisites

This course requires no past knowledge about Data Science or any tool.

Instructors

- Kunal Jain
- Pranav Dar
- Tavish Srivastava

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Course Content

- Welcome to Retail Demand Prediction Course
- Problem Statement Definition
- Exploratory Data Analysis
- Data preprocessing
- Understand Decision Tree and Random Forest
- Baseline Model and Validation Strategy
- Feature Engineering
- Gradient Boosting Methods & Hyperparameter Tuning
- Advance Ensembles Method
- Sharing Model Results & Feature Importance

Overview

Are you wondering how is machine learning being used today? Are you looking for some hands-on experience on a real-world dataset? Do you want to learn how to solve a business problem using machine learning?

If yes, then you have landed at the right place. This course is the perfect balance of theoretical learning and hands-on exercises.

The course is aimed at enabling you to build an end-to-end Machine Learning model on a real-world dataset – starting from converting a business objective into a machine learning problem, to building a complete machine learning model.

Pre-requisites
This course assume that you are familiar with the basic concepts of Machine learning and comfortable with coding in python.

Instructors

- Aishwarya Singh
- Ankit Choudhary

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4. Microsoft Excel: Beginners to Advanced

Course Content

- Introduction to Excel
- Getting Familiar with Excel Interface
- Excel Operations and Formatting
- Excel Formula and Referencing
- Date Time Functions
- Mathematical Functions
- Financial Functions
- Lookup Functions
- Logical and Error Functions
- Statistical Functions
- Sorting and Filtering
- Pivot Table
- Data Visualization (Charts)
- Conditional Formatting
- What-if Analysis Tools
- Data Validation and Security
- Printing

Overview

This course, will take you through the basic excel operations, leading up to the advanced features, such as pivot tables, conditional formatting etc. By the end of the course, you will have mastered Excel and will be ready to crunch numbers and prepare data!

This course is an ideal course for people looking to learn about basics as well as advanced techniques of Excel.

Case Study

- Building Business Simulation
- Creating Dashboard in Excel

Pre-requisites
This course assumes no past knowledge of MS Excel.

Instructors

- Sunil Ray
- Pranav Dar

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5. Tableau 2.0

Course Content

- The power of Visualization
- Introduction to the Course
- Getting started with Tableau
- Understanding the Length and Breadth of Tableau
- Setting up the Problem Statement
- Getting Hands-On with Tableau
- Different Chart Types in Tableau
- Calculated Fields and Parameters
- Joining and Blending Data in Tableau
- Building powerful Dashboards in Tableau
- The Art of Storyboarding in Tableau Science

Overview

Tableau is the best gold standard when it comes to building industry-level dashboards and performing elite-level storyboarding. In fact, Tableau has changed the way industries analyse and present data. No longer do we have to stick to static spreadsheet charts – we can now build interactive and beautiful visualizations and dashboards and share them within tour organization in seconds!

Case Study

- Capstone Project: Food Forecasting Analysis

Pre-requisites
This course requires no prior knowledge about Tableau or any other data visualization tool. You will learn all of this, including how Tableau works, from Scratch!

Instructors

- Pranav Dar

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6. Structured Query Language (SQL) for Data Science

Course Content

- Introduction to Databases
- Installing MySQL/MariaDB
- Getting Started
- Modifying Databases Structures
- Importing and Exporting Data
- Data Analysis
- Getting Data from Multiple Tables
- Introduction to Indexing
- MySQL Built-In Functions
- Manipulate MySQL from Python

Overview

SQL is a must have skill for every data science professional. This course will start from basics of databases and structured query language (SQL) and teach you everything you would need in any data science profession including Writing and executing efficient Queries, Joining multiple tables and appending and manipulating tables.

Case Study

- Descriptive Analytics of FIFA 19 Players

Pre-requisites

This course requires no past knowledge about Data Science or any tool.

Instructors

- Anand Mishra

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Course Content

- Getting Started
- Resume Layout
- Taglines
- Your Skills
- Your Experience
- Education
- LinkedIn and Cover Letters
- Final Thoughts

Overview

Updating your resume is a skill that you can learn (yes you). Once you know how to expertly update your resume, you'll be able to effectively market your skills when applying for your next Data Science job and all of the jobs you apply to in the future.

You just need a nice looking template that gets past the automated systems, an understanding of what companies are looking for, and a way to showcase your skills that gets noticed and makes an impact.

Pre-requisites
This course requires no past knowledge about Data Science or any tool.

Instructors

- Kristen Kehrer

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8. Ace Data Science Interviews

Course Content

- Overview – Ace Data Science Interviews
- The 7 step Data Science Interviews process
- Understanding Roles, skills, Interviews process
- Building your Digital Presence
- Building Resume and Applying for Jobs
- Telephonic Interviews
- Assignments
- In Person Interview(s)
- Post Interview Follow ups

Overview

This course has been created based on hundreds of interviews we have taken, companies we have helped in data science interviews and several data science experts in the industry.

Downloadable Resources

- Infographic for 7 step process to "Ace Data Science Interviews"
- e-book containing more than 240 interview questions from interviews in industry.
- Interview Questions on machine learning, statistics, Model building, Machine Learning production, SQL.
- Checklist for your LinkedIn and GitHub profiles

Instructors

- Kunal Jain
- Pranav Dar

9. Fundamentals of Deep Learning

Course Content

- Introduction to Deep Learning
- Introduction to Neural Network
- Forward and Backward propagation
- Implementing Neural Network from scratch (NumPy)
- Activation Functions
- Optimizers & Loss Function
- Introduction to Keras
- Getting Started with Image Data
- Image Classification Challenge
- Functional API in Keras
- Improving your Deep Learning Model
- Convolutional Neural Networks
- Transfer learning
- Working with Text Data
- Recurrent Neural Network (RNNs)
- Advance Sequence Models (LSTM & GRU)
- Solving Text Classification Challenge
- Solving Time Series Challenge
- Solving Audio Classification Challenge
- Unsupervised Deep Learning
- Introduction to PyTorch
- Build Deep Learning Models using PyTorch

Overview

What is deep learning? How can you get started with deep learning? This comprehensive course will provide you with everything you need to know about deep learning with Python, including a deep dive into neural networks! Deep learning algorithms are powered by techniques like Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), Long Short Term Memory (LSTM), etc.

Case Study

- Loan Eligibility prediction
- Classify Emergency Vehicles from Non-Emergency Vehicle
- Auto tagging StackOverflow Queries
- Web Traffic Forecasting
- Audio Classification

Pre-requisites
This course does not assume any prior knowledge of Artificial Intelligence or it's associated terms.

Instructors

- Aishwarya Singh
- Prateek Joshi
- Pulkit Sharma

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10. Computer Vision using Deep Learning 2.0

Course Content

- Introduction to Computer Vision
- Introduction to Neural Network
- Introduction to Convolutional Neural Network
- Introduction to Transfer Learning
- Tips and Tricks to Improve Model Performance
- Horizon of Computer Vision and Case Studies
- Object Detection
- Expert Talks

Overview

This course is designed to give you a taste of how the underlying techniques work in current State - of -the - Art Computer Vision systems, and walks you through a few of the remarkable Computer Vision applications in a hands - on manner so that you can create such solutions on your own.

Case Study

- Classify Emergency Vehicles from Non-Emergency
- Vehicles Age Prediction of People from Closeups of Facial Images
- Identify the Location of Red Blood Cells

Pre-requisites

This is a beginner friendly course, so it does not assume any familiarity with Computer Vision or Deep Learning algorithms. But, this course assumes that you are comfortable with Python programming.

Instructors

- Faizan Shaikh
- Neeraj Singh Sarwan

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Course Content

- Introduction to NLP
- A Refresher to Python
- Learn to Use Regular Expression
- First Step of NLP - Text Processing
- Extracting Named Entities from Text
- Featuring Engineering for Text
- Mastering the Art of text cleaning
- Interpreting Patterns from Text - Topic modelling
- Machine Learning Algorithms
- Understanding Text Classification
- Introduction to Deep Learning (Optional)
- Deep Learning for NLP
- Recurrent Neural Network
- Introduction to Language Model in NLP
- Sequence to Sequence Modelling
- Build your first Chatbot
- Expert Talks

Overview

More than 80% of the data in this world is unstructured in nature, which includes text. You need text mining and Natural Language processing (NLP) to make sense out of this data. NLP helps you extract insights from emails of customers, their tweets, text messages. This course makes you industry ready for all the applications of NLP.

Case Study:
- Categorization of Sports Articles
- SMS Spam Classification
- Hate Speech Classification
- Summarizing Customer Reviews
- Build Chatbot using Rasa

Pre-requisites
- This course requires you to know Machine Learning
- Familiarity with Python would be an advantage (It is taught in the course as well!)
- No requirement of past experience on NLP

Instructors

- Prateek Joshi
- Shivam Bansal

12. Computer Vision Using Deep Learning (PyTorch)

Course Content

- Introduction to Computer Vision
- Horizons of Computer Vision
- Understanding different Pre-trained models
- Image Localization
- Object Detection
- Pose Detection
- Face Detection
- Image Segmentation
- Lane Segmentation
- Image Generation

Overview

We can safely say that PyTorch is on that list of deep learning frameworks. It has helped accelerate the research that goes into deep learning models by making them computationally faster and less expensive (a data scientist's dream!).

You will love working with PyTorch for computer visions tasks like image classification, object detection, pose detection and much more. You will quickly find yourself leaning on PyTorch's flexibility and efficiency for computer vision.

Pre-requisites
- This course requires you to know Machine Learning and Deep Learning
- Familiarity with Python is required

Instructors

- Faizan Shaikh
- Aishwarya Singh
- Pulkit Sharma

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Course Content

- Recent Developments in NLP
- Language Modeling
- Project 1: Building an Autocomplete System
- Sequence-to-Sequence Modeling
- Project 2: Neural Machine Translation
- Transformers and Transfer Learning in NLP
- Project 3: Text classification using Transformers
- Project 4: Build a Dialog System using RASA
- Project 5: Build a Voice Command System

Overview

PyTorch is on that list of deep learning frameworks. It has helped accelerate the research that goes into deep learning models by making them computationally faster and less expensive (a data scientist's dream!).

You will love with PyTorch for NLP tasks likes building language models and creating deep learning powered chatbots.

Pre-requisites

- This course requires you to know Machine Learning
- Familiarity with Python would be an advantage
- No requirement of past experience on NLP

Instructors

- Ankit Choudhary
- Prateek Joshi

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14. AI and ML for Business Leaders

Course Content

- Introduction to AI
- Common Tools, Techniques and Terminologies
- Applications of AI & ML In the Real World
- Building AI Capabilities in your organization
- Artificial Intelligence Creation Process
- Promises and Challenges of Artificial Intelligence

Overview

AI for Business Leaders is a thoughtfully created course designed specifically for business people and does not require any programming.

This course also dives into the various building blocks of AI and why it's necessary for you to have a high-level overview of these topics in today's data-driven world.

Pre-requisites

This course does not assume any prior knowledge of Artificial Intelligence or it's associated terms. Bring your business and managerial experience - the course will help you do the rest!

Instructors

- Kunal Jain
- Pranav Dar

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15. Advanced Python and Software Engineering Fundamentals

Course Content

- Overview of Python Basics
- Good Programming Practices
- Exception Handling and Assertions
- Python Standard Libraries
- Functional Programming
- Working with multiple files
- Object Oriented Programming
- Concept of Inheritance
- Working with Shell/Terminal Commands
- Introduction to Version Control
- Introduction to Multi-Processing
- Connecting with DataBases
- Working with Github
- Building a package/library

Overview

Python has rapidly become the go-to language in the data science space and is among the first things recruiters search for in a data scientist's skill set. Over the years, with strong community support, this language has obtained a dedicated library for data analysis, predictive modeling, and model deployment. With this advanced course on Python, polish your coding skills and learn about the advanced concepts including classes, decorators, and multithreading. Gain expertise in Python Programming language to further your career in Data Science.

Pre-requisites

The course requires you to know Basic Python.

Instructors

- Aishwarya Singh
- Sharoon Saxena

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16. Deploying ML/DL Models

Course Content

- Introduction to Model Deployment
- Deploying Machine Learning model using Streamlit
- Deploying Machine Learning model using AWS
- Deploying Deep Learning model using AWS
- Model Deployment using Sagemaker
- Deploying models using APIs

Overview

In this course on Model Deployment, you will learn how to deploy models from different domains ranging from Machine Learning to Deep Learning, Natural Language Processing (NLP) to Computer Vision (CV). To explain concepts of Model Deployment, we will cover a range of real life projects from various industries like Banking, Healthcare, and much more. You will also learn different tools used for Model Deployment with hands-on experience.

Case Studies

- Automating Loan Eligibility process
- Build your own Image Classification App
- Cardiac Arrest Prediction
- Typing Tutor
- Automatic Transcript Generation

Pre-requisites

This course assumes that you are familiar with advanced python along with the basic concepts of Machine learning and Deep Learning.

Instructors

- Pulkit Sharma

- Faizan Shaikh

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17. Mastering Apache Spark with Python

Course Content

- What is Big Data and its challenges?
- Introduction to Apache Hadoop
- Introduction to Apache Spark
- Deep Dive into Spark
- RDDs in Spark
- DataFrames in Spark
- Understanding Spark Execution
- Advance Programming in Spark
- Spark SQL
- Spark ML
- ML Pipelines in Spark

Overview

In this course, we will learn about Big Data, its applications and its challenges. How Spark helps us in dealing with Big Data? We will be covering the architecture of spark, its internal working and optimization techniques. We will learn how to use the different Spark APIs like Spark SQL, Spark ML using Python.

Pre-requisites

- Good to have knowledge of any SQL platform like MySQL, PostgreSQL, Oracle, etc.
- Good to have knowledge of any programming language like Python, Java, Scala, etc.
- You should be familiar with Object-Oriented Programming concepts like Classes, Objects, Inheritance, etc.
- You should be familiar with concepts of lambda functions and higher-order functions.
- Good to have knowledge of machine learning concepts.

Instructors

- Siddharth Sonkar

- Lakshay Arora

- Aniruddha Bhandari

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