

THE ULTIMATE DATA SCIENCE & AI BOOTCAMP

WITH PRACTICAL JOB ASSISTANCE

By



THE BOOTCAMP YOU DESERVE



codebasics.io

CODEBASICS' STORY



In 2016, **Dhaval Patel**, the founder of Codebasics, created the '**Codebasics' YouTube channel**' to share his knowledge as a means to gain mental peace during a significant health struggle. He discovered his passion for teaching and realised his unique ability to simplify complex topics. The love and blessings from thousands of students started to heal his health issues. This transformative experience soon became his life's purpose and even led him to consider leaving his lucrative job at Bloomberg, New York.

In 2020, one of Dhaval's subscribers, **Hemanand Vadivel**, a **data analytics expert** working in Europe, wished to contribute to the Codebasics' community as a 'payback' for what he learned from the Codebasics channel. In 2021, Hemanand began creating impactful videos for Codebasics, and it helped him heal from the trauma of losing family members to Covid-19. Seeing their shared values, Dhaval proposed a collaboration: creating the best, most affordable Power BI course on the planet.



JUNE 2022

After six months of dedicated collaboration, they released the Power BI course in June 2022, which was met with overwhelming positivity. By this time, both Dhaval and Hemanand had already left their high-paying jobs to create 'Codebasics' as a full-time learning tech company. They made this decision after discovering their 'Ikigai', their true purpose: to make a meaningful impact through education, without any gimmicks.

In the era of commoditized education, where millions of courses are offered for profit but lack true value, Dhaval and Hemanand prioritized providing authentic, job-relevant learning experiences with honest pricing. Besides job-related affordable courses, Codebasics offers high-quality free content and conducts several initiatives to support aspirants including mothers returning to work. This embodies their core vision of providing authentic job-related learning experiences to everyone, irrespective of their financial condition.

JAN 2025

Codebasics has more than
1 Million+ learners
in their community and strongly marching
forward with a vision to unleash at least
5 Million+ potentials by 2026.

YOUR TEACHERS ARE INDUSTRY EXPERTS



Dhaval Patel

Data Entrepreneur (13+ Years),
YouTuber,
Ex - Bloomberg, NVIDIA

I have 18 years of experience in Programming and Data Science working for big tech companies like NVIDIA and Bloomberg. I also run a famous YouTube channel called Codebasics where I pursue my passion for teaching.



Hemanand Vadivel

Ex- Data Analytics Manager,
8+ Years in Europe, Microsoft Certified,
Certified Supply Chain Professional

I'm a Mechanical Engineer who transitioned to a full-time Data & Analytics Manager in the UK & Germany. I have delivered 30+ analytics projects over 15+ countries and trained professionals at different levels to equip them with valuable analytics skills.



DATA SCIENCE & AI BOOTCAMP:

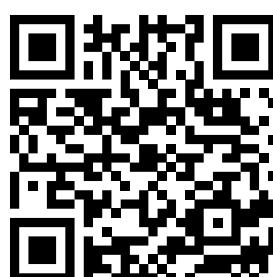
WITH PRACTICAL JOB ASSISTANCE + VIRTUAL INTERNSHIP



WHY THIS IS THE MOST EFFECTIVE BOOTCAMP ON THIS PLANET

- We respect both your time and money. Hence, we recommend you take our short Data Science Survey before enrolling in our Bootcamp.
- We offer unlimited chat support for doubt clearing through Discord.
- We provide comprehensive practical job assistance that includes: ATS Resume Builder, Interview Preparation, Virtual Internships, Building Online Credibility, Job Application and Interview Playbooks.
- You will experience highly engaging content that provides a cinematic feel, real-world business practice problems, and interactive business meetings.
- In this bootcamp, you won't be working on toy datasets. Instead, you'll tackle complex datasets used by real companies, with millions of records.
- The projects you will be working on will be related to F & B, Banking, Healthcare, Finance, Hospitality, Automotive, Real Estate & Logistics and more will be added in the future.
- 100% refund within 30 days and pay the difference feature.

**Scan the
QR Code
to start the survey!**



PYTHON

FOR BEGINNER AND INTERMEDIATE LEARNERS

This project-based learning course will teach Python through hands-on experience with two real-world projects: (1) Data analysis in the hospitality domain and (2) Building an expense tracking system. It is designed for both complete beginners with no prior coding experience and those with some Python knowledge looking to enhance their skills. The course is taught by an industry expert with over 14 years of experience at leading tech companies such as Nvidia and Bloomberg.



6250+
Learners

4.8
Rating

SYLLABUS

- | | |
|---|---|
| <ul style="list-style-type: none"><input checked="" type="checkbox"/> Python Installation – Windows<input checked="" type="checkbox"/> Python Installation – Linux<input checked="" type="checkbox"/> Python Installation – Mac<input checked="" type="checkbox"/> Variables<input checked="" type="checkbox"/> Numbers<input checked="" type="checkbox"/> Strings<input checked="" type="checkbox"/> Lists<input checked="" type="checkbox"/> Install Pycharm<input checked="" type="checkbox"/> If Condition<input checked="" type="checkbox"/> For Loop<input checked="" type="checkbox"/> Functions<input checked="" type="checkbox"/> Dictionary and Tuples | <ul style="list-style-type: none"><input checked="" type="checkbox"/> File Handling<input checked="" type="checkbox"/> Classes and Objects<input checked="" type="checkbox"/> Operator Overloading<input checked="" type="checkbox"/> Inheritance<input checked="" type="checkbox"/> Exception Handling<input checked="" type="checkbox"/> Main Function<input checked="" type="checkbox"/> Numpy Introduction and Benefits<input checked="" type="checkbox"/> Basic Operations<input checked="" type="checkbox"/> Matrix Operations<input checked="" type="checkbox"/> Slicing, Stacking<input checked="" type="checkbox"/> Pandas Introduction and Installation |
|---|---|

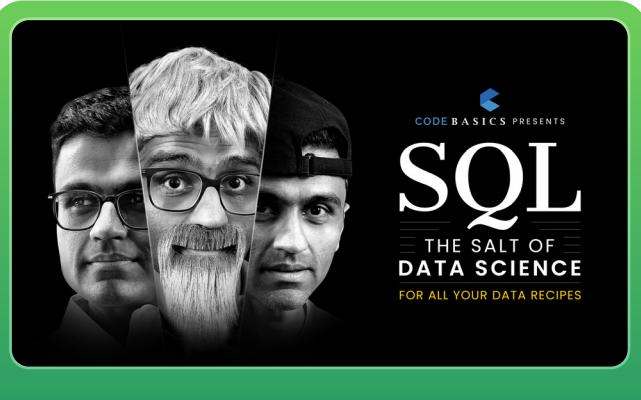
- Modules and Pip
- Dataframe Basics
- Read, Write Excel and CSV Files
- Handle NA values
- Group By
- Concat and Merge
- Data Visualization Using Matplotlib and Seaborn
- Data Exploration
- Data Cleaning
- Data Transformation
- Insights Generation
- Set and Frozenset
- Lists, Dict and Set Comprehensions

- Dataframe Basics
- Code Debugging Using PyCharm
- Working with JSON
- Generators and Iterators
- Decorators
- API
- Calling APIs with request Package
- Building APIs with FastAPI
- Automated Testing with Pytest
- Data Validation with Pydantic
- Database CRUD Operations
- Streamlit Introduction (Frontend)
- Analytics: Backend (FastAPI) & Frontend (Streamlit)

SQL

BEGINNER TO ADVANCED FOR DATA PROFESSIONALS

Beginners to advanced course for those preparing for a data career (data analyst, data scientist, or data engineer). This course is carefully curated to **simulate real-time organizational** experience to prepare you for the current job market and at the same time provides you with an ultimate learning experience through a **storytelling mode** that you would see in movies.



7940+
Learners

4.9
Rating

SYLLABUS

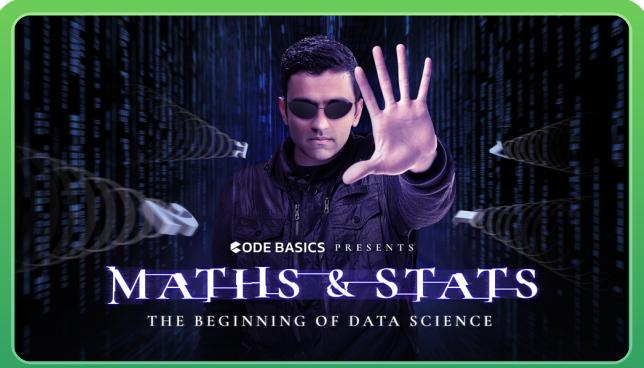
- Install MySQL: Windows
- Install MySQL: Linux, Mac
- Retrieve Data Using Text Query
(SELECT, WHERE, DISTINCT, LIKE)
- Retrieve Data Using Numeric Query
(BETWEEN, IN, ORDER BY, LIMIT, OFFSET)
- Summary Analytics
(MIN, MAX, AVG, GROUP BY)
- HAVING Clause
- Calculated Columns
(IF, CASE, YEAR, CURYEAR)
- Joins
(INNER, LEFT, RIGHT, FULL,CROSS)
- Join More Than Two Tables
- Subqueries
- ANY, ALL Operators
- Correlated Subquery
- Common Table Expression (CTE)
- CTE Benefits & Other Applications
- Entity Relationship Diagram (ERD)
- Database Normalization and
Data Integrity
- Data Types: Numeric
(INT, DECIMAL, FLOAT, DOUBLE)
- Data Types: String
(VARCHAR, CHAR, ENUM)
- Data Types: Date, Time
(DATETIME, DATE, TIME, YEAR, TIMESTAMP)
- Data Types: JSON, Spatial
(JSON, GEOMETRY)

- Primary Key
 - Foreign Key
 - Entity Relationship Diagram – ERD
 - INSERT, UPDATE, DELETE Statement
 - ETL, Data Warehouse
 - OLAP vs OLTP, Data Catalog
 - Fact vs Dimension Table
 - Star vs Snowflake Schema
 - Data Import
 - Simplified: What is Kanban?
-
- User-Defined Functions
 - Stored Procedures
 - Database Views
 - Window Functions OVER Clause, ROW_NUMBER, RANK, DENSE_RANK
 - Database Triggers
 - Database Events
 - User Accounts and Privileges
 - Database Indexes

MATH AND STATISTICS

FOR AI, DATA SCIENCE

Learn the key concepts of Math and Statistics that lay the foundations for a strong data science career. This course is carefully curated to simulate real-time organizational experience to prepare you for the current job market and at the same time provides you with an ultimate learning experience through storytelling and intuitive explanations.



1360+
Learners

5.0
Rating

SYLLABUS

- | | |
|---|---|
| <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Types of Data <input checked="" type="checkbox"/> Pie Chart and Bar Chart <input checked="" type="checkbox"/> Histograms and Line Chart <input checked="" type="checkbox"/> Scatter and Bubble Plot <input checked="" type="checkbox"/> Univariate vs. Bivariate vs. Multivariate Analysis <input checked="" type="checkbox"/> Numpy Introduction and Benefits <input checked="" type="checkbox"/> Basic Operations <input checked="" type="checkbox"/> Matrix Operations <input checked="" type="checkbox"/> Slicing, Stacking <input checked="" type="checkbox"/> Descriptive vs. Inferential Statistics <input checked="" type="checkbox"/> Measures of Central Tendency: Mean, Median, Mode | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Percentile <input checked="" type="checkbox"/> Measures of Dispersion: Range, IQR <input checked="" type="checkbox"/> Box or Whisker Plot <input checked="" type="checkbox"/> Outlier Treatment Using IQR and Box Plot <input checked="" type="checkbox"/> Measures of Dispersion: Variance and Standard Deviation <input checked="" type="checkbox"/> Correlation vs Causation <input checked="" type="checkbox"/> Probability Basics <input checked="" type="checkbox"/> Addition and Multiplication Rule <input checked="" type="checkbox"/> Conditional Probability and Bayes Theorem <input checked="" type="checkbox"/> Distribution |
|---|---|

- | | |
|--|---|
| <ul style="list-style-type: none"><input checked="" type="checkbox"/> Skewness<input checked="" type="checkbox"/> Normal Distribution<input checked="" type="checkbox"/> Detect Outliers Using Normal Distribution<input checked="" type="checkbox"/> Z Score<input checked="" type="checkbox"/> Standard Normal Distribution (SND)<input checked="" type="checkbox"/> Kanban Project Management<input checked="" type="checkbox"/> Random Sampling & Sample Bias<input checked="" type="checkbox"/> The Law of Large Numbers<input checked="" type="checkbox"/> Central Limit Theorem, Sampling Distribution<input checked="" type="checkbox"/> Standard Error | <ul style="list-style-type: none"><input checked="" type="checkbox"/> Confidence Interval<input checked="" type="checkbox"/> Null vs Alternate Hypothesis<input checked="" type="checkbox"/> Z Test, Rejection Region<input checked="" type="checkbox"/> p-Value<input checked="" type="checkbox"/> Statistical Power & Effect Size<input checked="" type="checkbox"/> A/B Testing<input checked="" type="checkbox"/> A/B Testing Using Z Test<input checked="" type="checkbox"/> T-test<input checked="" type="checkbox"/> Chi-squared Distribution<input checked="" type="checkbox"/> Chi-squared Test of Goodness of Fit<input checked="" type="checkbox"/> Chi-squared Test of Independence |
|--|---|

MASTER MACHINE LEARNING FOR DATA SCIENCE & AI

BEGINNER TO ADVANCED

Learn Machine Learning from an AI entrepreneur with extensive industry experience and a popular YouTube channel (Codebasics) with 1 million subscribers. This course takes you from beginner to advanced levels, providing deep intuition on algorithms, engaging cinematic experiences, end-to-end projects, and hands-on coding practice. Designed for easy understanding, even for high school students, all at an affordable price.



2210+
Learners

5.0
Rating

SYLLABUS

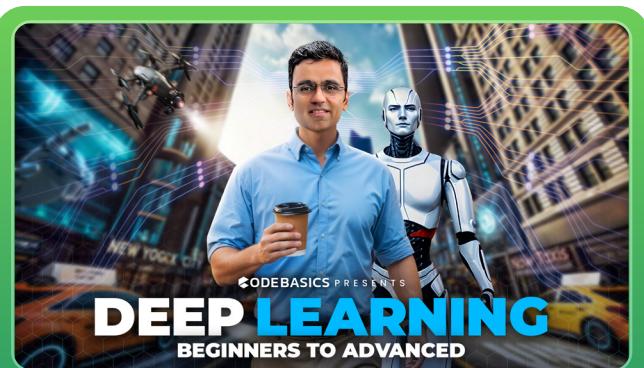
- ✓ Introduction to Machine Learning
- ✓ Classification vs Regression
- ✓ Supervised vs Unsupervised Learning
- ✓ Simple Linear Regression
- ✓ Multiple Linear Regression
- ✓ Cost Function
- ✓ Derivatives and Partial Derivatives
- ✓ Chain Rule
- ✓ Gradient Descent
- ✓ Model Evaluation
- ✓ Data Preprocessing: One Hot Encoding
- ✓ Polynomial Regression
- ✓ Overfitting and Underfitting
- ✓ L1 and L2 Regularization
- ✓ Bias Variance Trade Off
- ✓ Introduction to Classification
- ✓ Logistic Regression: Binary Classification
- ✓ Model Evaluation: Accuracy, Precision and Recall, F1 Score, Confusion Matrix
- ✓ Logistic Regression: Multiclass Classification
- ✓ Cost Function: Log Loss
- ✓ Support Vector Machine (SVM)
- ✓ Data Pre-processing: Scaling
- ✓ Sklearn Pipeline
- ✓ Naive Bayes

- Decision Tree
- Handle Class Imbalance
- Introduction to Ensemble Learning
- Majority Voting, Average and Weighted Average
- Bagging
- Random Forest
- Boosting: AdaBoost
- Gradient Boosting
- XGBoost
- Model Evaluation: ROC Curve & AUC
- Cost Benefit Analysis Using ROC in Sklearn
- K Fold Cross Validation
- Stratified K Fold Cross Validation
- Hyperparameter Tuning
- 10 Stages of AI Project Lifecycle
- Requirements and Scope of Work (SOW)
- Data Collection, Data Cleaning & Exploratory Data Analysis
- Feature Engineering
- Model Selection & Training
- Model Fine Tuning
- Model Deployment
- Monitoring and Feedback Using ML Ops
- Variance Inflation Factor (VIF)
- K Means Clustering

DEEP LEARNING

BEGINNER TO ADVANCED

Deep Learning: Beginner to Advanced is a comprehensive course that covers everything from the fundamentals of neural networks to advanced architectures such as CNNs, RNNs and transformers. Taught by an experienced AI professional, the course emphasizes practical learning through hands-on exercises and real-world projects in PyTorch. By the end, you'll have the skills to confidently build, train, and deploy deep learning models for real-world applications.



240+
Learners

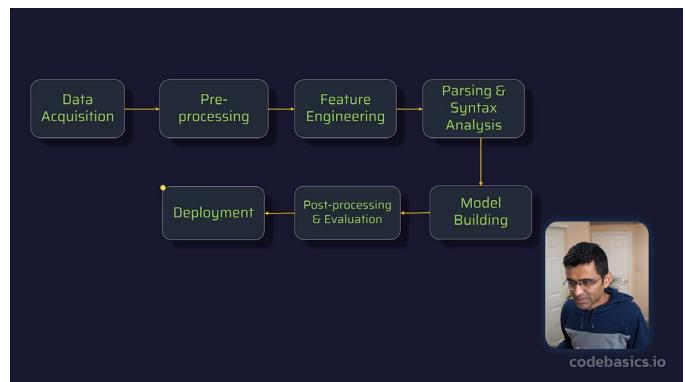
SYLLABUS

- | | |
|---|--|
| <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Introduction to Deep Learning <input checked="" type="checkbox"/> Neural Networks <input checked="" type="checkbox"/> Deep Learning vs Statistical ML <input checked="" type="checkbox"/> Neural Network Architectures <input checked="" type="checkbox"/> Applications of Deep Learning <input checked="" type="checkbox"/> PyTorch vs TensorFlow <input checked="" type="checkbox"/> GPU, TPU <input checked="" type="checkbox"/> Neuron, Perceptron and MLP <input checked="" type="checkbox"/> Activation Function <input checked="" type="checkbox"/> Sigmoid, ReLU, Tanh, SoftMax <input checked="" type="checkbox"/> PyTorch Installation <input checked="" type="checkbox"/> PyTorch Tensor Basics | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Autograd in PyTorch <input checked="" type="checkbox"/> Training through Backpropagation <input checked="" type="checkbox"/> Gradient Descent <input checked="" type="checkbox"/> Theoretical Foundation, PyTorch Implementation <input checked="" type="checkbox"/> Batch GD vs Mini Batch GD vs SGD <input checked="" type="checkbox"/> Handwritten Digits Classification <input checked="" type="checkbox"/> Model Optimization <input checked="" type="checkbox"/> Gradient Descent with Momentum <input checked="" type="checkbox"/> Adam Optimizer <input checked="" type="checkbox"/> Regularization <input checked="" type="checkbox"/> Dropout Regularization |
|---|--|

- Batch Normalization
 - Hyperparameter Tuning
 - Optuna
 - CNN
 - CIFAR10 Image Classification using CNN
 - Data Augmentation
 - Transfer Learning
 - Pre-trained Models: ResNet, EfficientNet, MobileNet
 - RNN
 - Vanishing Gradient Problem
-
- LSTM
 - Transformer Architecture
 - Word Embeddings
 - Attention Mechanism
 - Hugging Face: BERT Basics
 - Model Training with CNN
 - Model Training using Transfer Learning
 - Streamlit App
 - FastAPI Server

NATURAL LANGUAGE PROCESSING (NLP)

This course takes you through the core concepts of NLP, covering topics such as text preprocessing, representation techniques, and advanced tools like Hugging Face and BERT. With a focus on hands-on exercises, it provides practical exposure to key NLP workflows, ensuring you gain the skills required for NLP-driven roles in today's job market.

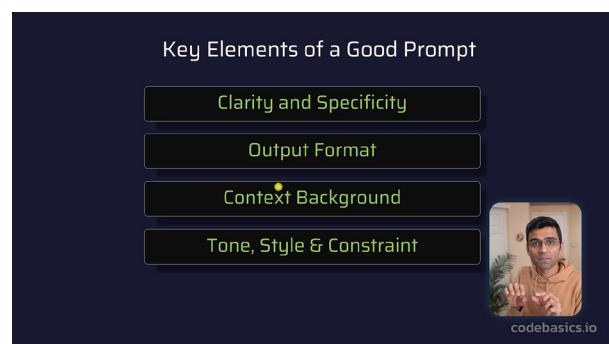
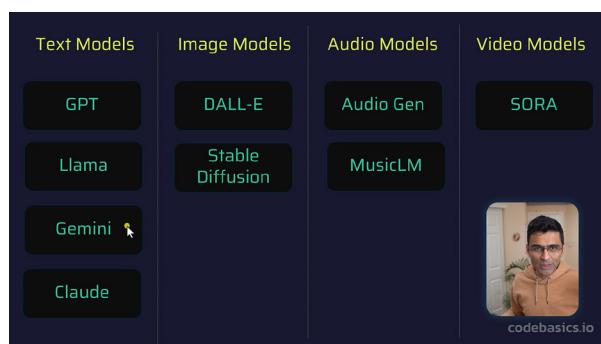


SYLLABUS

- | | |
|---|---|
| <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Introduction to NLP <input checked="" type="checkbox"/> NLP Pipeline <input checked="" type="checkbox"/> Tools Overview <input checked="" type="checkbox"/> Tokenization Techniques <input checked="" type="checkbox"/> Stemming & Lemmatization <input checked="" type="checkbox"/> Part of Speech (POS) Tagging <input checked="" type="checkbox"/> Stop Words <input checked="" type="checkbox"/> Named Entity Recognition (NER) <input checked="" type="checkbox"/> Regular Expressions (Regex) | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Bag of Words, n-grams, TF-IDF <input checked="" type="checkbox"/> Word Embeddings <input checked="" type="checkbox"/> Word Embeddings <input checked="" type="checkbox"/> News Classification with Spacy <input checked="" type="checkbox"/> Introduction to Hugging Face <input checked="" type="checkbox"/> Pipelines and Tokenizers <input checked="" type="checkbox"/> BERT and Model Fine Tuning |
|---|---|

Gen AI

This course explores the core concepts of Generative AI, including large language models, RAG, vector databases, and prompt engineering. It features two real-world projects: a real estate assistant using RAG and ChromaDB, and an e-commerce chatbot capable of handling FAQs, managing product queries, and implementing database-driven functionalities. With hands-on exercises and practical implementations using tools like LangChain and Streamlit, you'll gain the skills to build AI applications and prepare for real-world AI roles.



SYLLABUS

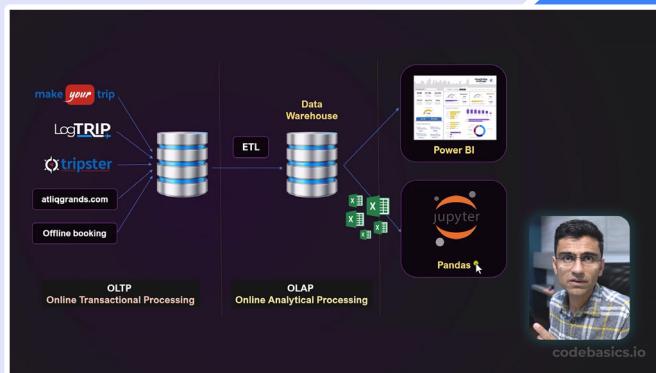
- Introduction to Generative AI
- Applications of Generative AI
- Large Language Models
- LLMs
- Context Window
- Temperature
- Top-p
- Top-k
- Gen AI Application Development Steps
- Hallucinations, Security, Cost
- Vector Database
- RAG (Retrieval Augmented Generation)
- Elements of a Good Prompt
- Zero-Shot, One-Shot, Few-Shot Prompting
- LangChain Installation and Setup
- Calling LLM from LangChain
- Prompt Templates & Chains
- Chromadb
- Metadata Filtering
- Euclidean and Cosine Distance
- Streamlit UI Development
- SQLite Database Integration
- Bonus: Web Scraping

BUSINESS PROJECTS

01

HOSPITALITY DOMAIN DATA ANALYSIS

PYTHON



```

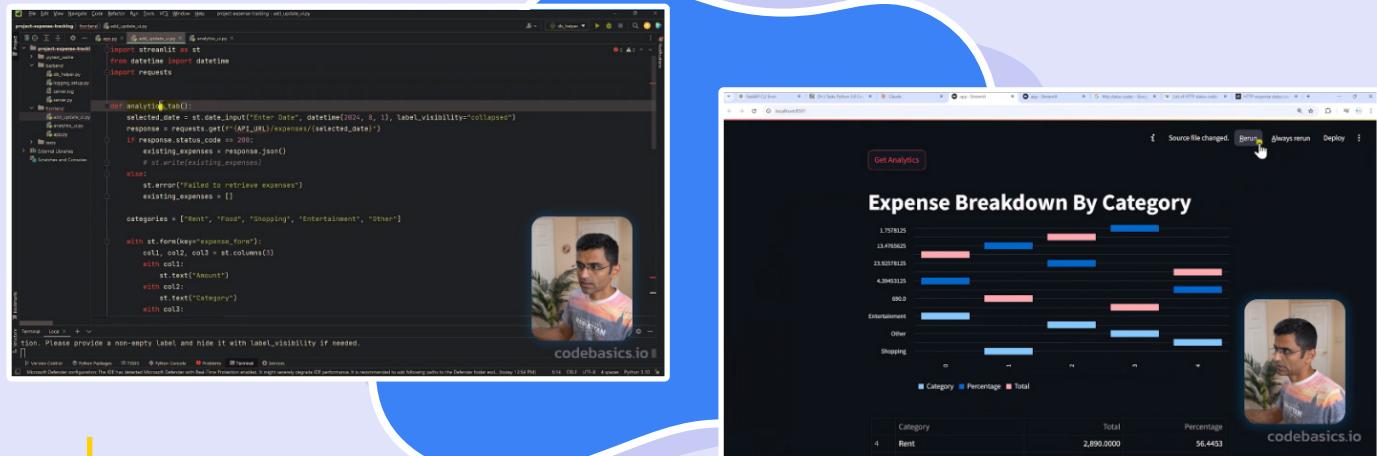
Out[96]:
bookings_id property_id booking_date check_in_date checkout_date no_guests room_category booking_platform ratings_g

In [97]: df_bookings.all().info()
<class 'pandas.core.frame.DataFrame'>
Int64Index: 134573 entries, 0 to 134572
Data columns (total 15 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   booking_id      134573 non-null  object  
 1   property_id     134573 non-null  int64  
 2   booking_date    134573 non-null  object  
 3   check_in_date   134573 non-null  object  
 4   checkout_date   134573 non-null  object  
 5   no_guests       134573 non-null  float64 
 6   room_category   134573 non-null  object  
 7   booking_platform 134573 non-null  object  
 8   ratings_given   56676 non-null  float64 
 9   booking_status  134573 non-null  object  
 10  revenue_generated 134573 non-null  int64  
 11  revenue_realized 134573 non-null  int64  
 12  property_name   134573 non-null  object  
 13  category        134573 non-null  object  
 14  city            134573 non-null  object  
dtypes: float64(2), int64(3), object(10)
memory usage: 16.4+ MB
  
```

By completing this project, you will:

- Gain deep domain knowledge in the hotel industry, specifically in data analysis for operations, customer behaviour, revenue management, and market trends.
- Acquire essential technical skills using Python's Pandas library, including data cleaning, transformation, EDA, statistical analysis, and visualization.
- Recognize the high relevance of data-driven insights in today's business world for making informed decisions, optimizing operations, and enhancing customer experiences, not just in the hotel industry but across various sectors.

02 EXPENSE TRACKING SYSTEM — PYTHON

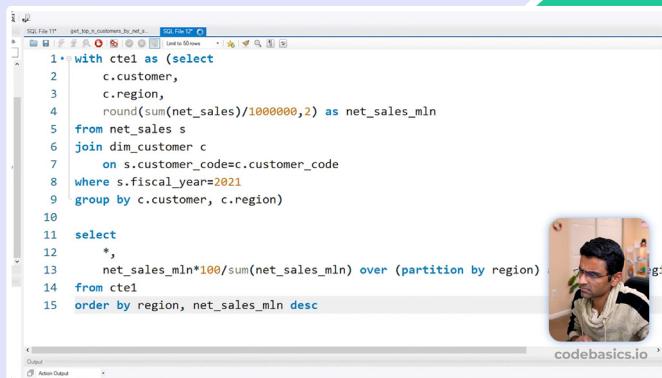


By completing this project, you will:

- Develop practical knowledge of expense management systems by building an application that tracks and analyses day-to-day expenses, such as rent, shopping, and food, providing users with a comprehensive view of their spending habits.
- Master key technical skills, including Python basics, database interactions with MySQL, backend development using FastAPI, and frontend design using the Streamlit framework, gaining end-to-end application development experience.
- Understand the value of analytics in financial decision-making by implementing features like category-wise and month-wise expense breakdowns, making this project relevant for aspiring software engineers, data scientists, and data analysts.

03 FINANCE AND TOP N INSIGHTS

— SQL

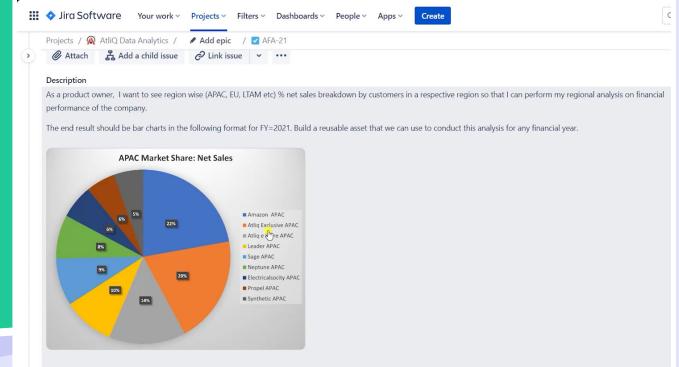


```

SQL File 11* get_top_n_customers_by_net_s...
Line to 50 rows
1* with cte1 as (select
2    c.customer,
3    c.region,
4    round((sum(net_sales)/1000000,2) as net_sales_mln
5  from net_sales s
6  join dim_customer c
7    on s.customer_code=c.customer_code
8  where s.fiscal_year=2021
9  group by c.customer, c.region)
10
11 select
12   *,
13   net_sales_mln*100/sum(net_sales_mln) over (partition by region)
14  from cte1
15 order by region, net_sales_mln desc

```

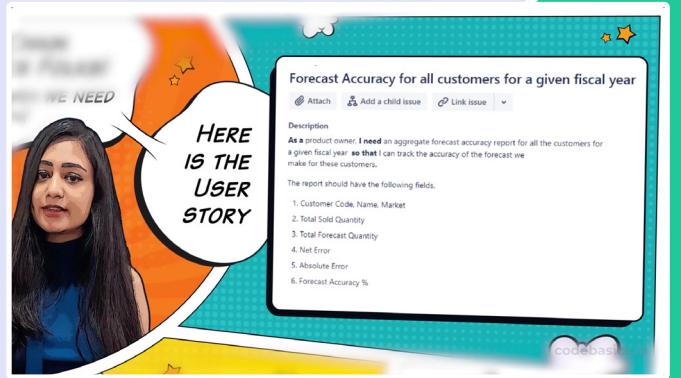
codebasics.io



- Gain domain knowledge in finance analytics for the consumer goods industry, focusing on generating reports for key metrics.
- Develop technical skills in efficient SQL querying, utilizing User-Defined Functions, creating and executing stored procedures, and leveraging views for data analysis.
- Understand the significance of data-driven financial decision-making in today's competitive business landscape.
- Drive sustainable growth by utilizing automated reporting solutions, such as stored procedures, to provide accurate and real-time information for financial analysis and decision-making.

04 | SUPPLY CHAIN ANALYTICS AND MODEL OPTIMISATION

SQL



```

1 • with cte
2 o   SELECT
3     s.customer_code,
4     sum(s.sold_quantity) as total_sold_qty,
5     sum(s.forecast_quantity) as total_forecast_qty,
6     sum((forecast_quantity-sold_quantity)) as net_err,
7     sum((forecast_quantity-sold_quantity))*100/sum(forecast_quantity) as net_err_pct,
8     sum(abs(forecast_quantity-sold_quantity)) as abs_err,
9     sum(abs(forecast_quantity-sold_quantity))*100/sum(forecast_quantity) as abs_err_pct
10    from gdb041.fact_act_est s
11   where s.fiscal_year=2021
12   group by customer_code;
13 • select
14   e.*,
15   c.customer,
16   c.market,
17   if (abs_err_pct > 100, 0, 100-abs_err_pct) as forecast_accuracy
18  from forecast_err_table e
19  join dim_customer c

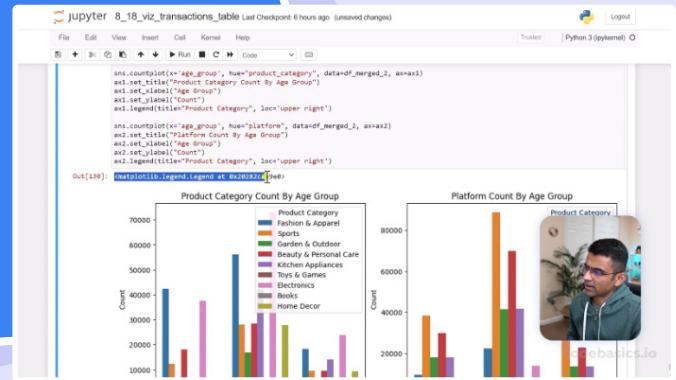
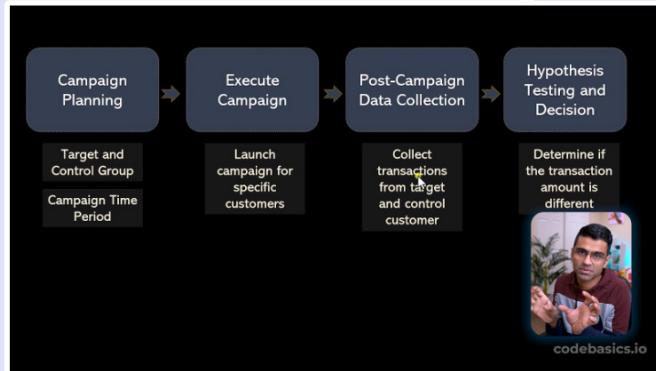
```

By completing this project, you will:

- Gain domain knowledge in supply chain analytics for the consumer goods industry, focusing on forecasting errors and absolute error calculation.
- Develop technical skills in creating helper tables, managing triggers, and optimizing query execution time.
- Understand the significance of accurate demand forecasting for consumer goods companies and how supply chain analytics can achieve it.
- Acquire practical experience through hands-on exercises and real-world examples in consumer goods supply chain analytics.

05 ATLIQO BANK PROJECT

MATH AND STATISTICS



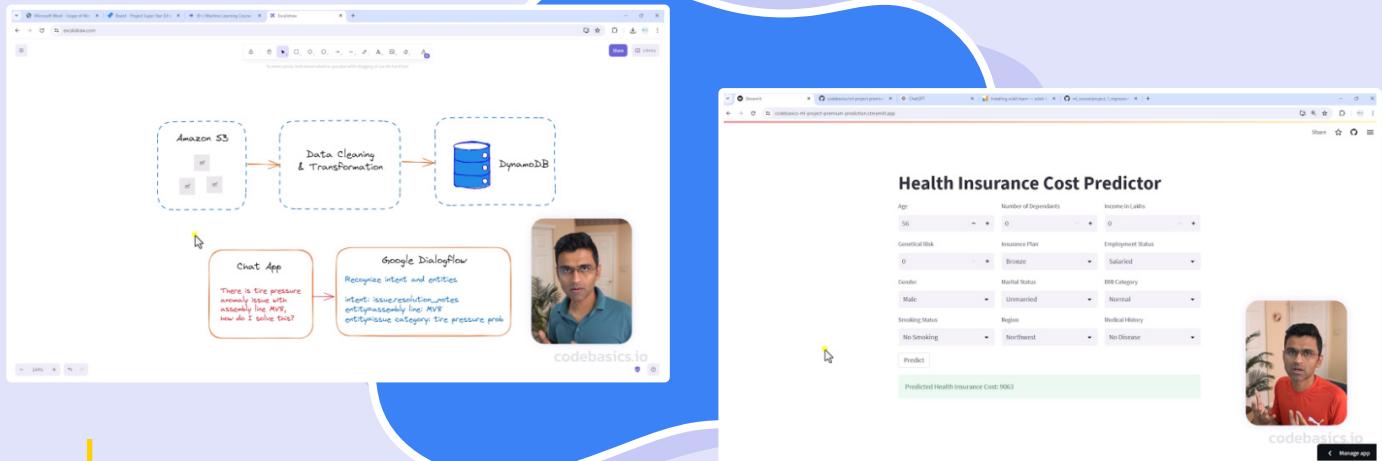
By completing this project, you will:

- Gain hands-on experience in the banking sector by working on a large-scale data analysis project aimed at identifying the target market for a new credit card launch, simulating real-life industry challenges with over 50,000 records.
- Master essential data analysis techniques, including data validation, cleaning, handling outliers, MySQL setup, and data visualization using Python, while performing critical tasks like credit score analysis, correlation studies, and hypothesis testing.
- Understand the role of A/B testing and statistical decision-making in marketing campaigns, providing insights into customer segmentation and campaign effectiveness, which are applicable across various industries.

06

HEALTHCARE PREMIUM PREDICTION (REGRESSION)

MACHINE LEARNING

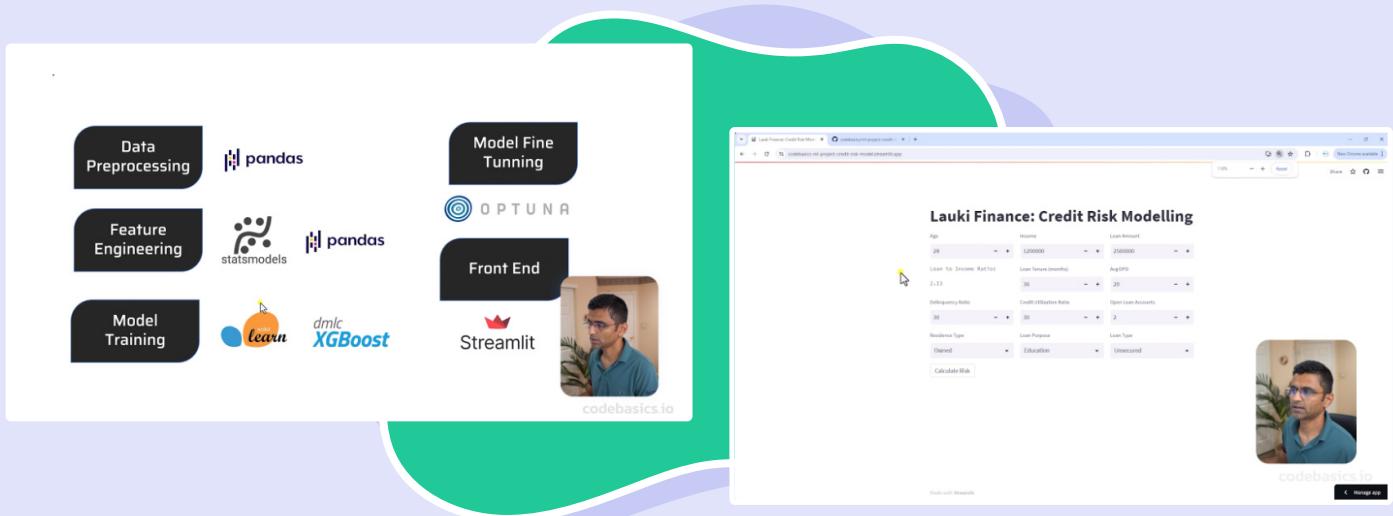


By completing this project, you will:

- Gain domain knowledge in the healthcare industry by predicting insurance premiums using machine learning regression models, covering real-world tasks like data collection, model training, and deployment.
- Develop advanced technical skills in data cleaning, exploratory data analysis (EDA), feature engineering, and regression model fine-tuning, achieving high accuracy while performing error analysis and segmentation.
- Understand the practical application of machine learning in predicting financial outcomes, and learning to build and deploy models using Python, Streamlit, and other tools for real-time decision-making across industries.

07 CREDIT RISK MODELLING (CLASSIFICATION)

MACHINE LEARNING



By completing this project, you will:

- Gain valuable insights into the financial domain, particularly non-banking financial companies (NBFCs) and credit approval processes, by developing a credit risk model to classify potential defaulters.
- Acquire technical expertise in data cleaning, exploratory data analysis (EDA), feature engineering (WOE/IV), and model training, with a focus on classification techniques, model fine-tuning using Optuna, and evaluation metrics like KS Statistic and Gini Coefficient.
- Learn how to deploy machine learning models by building a Streamlit app, delivering business presentations, and applying credit risk modelling principles across various financial sectors.

08 BEVERAGE PRICE RANGE PREDICTION

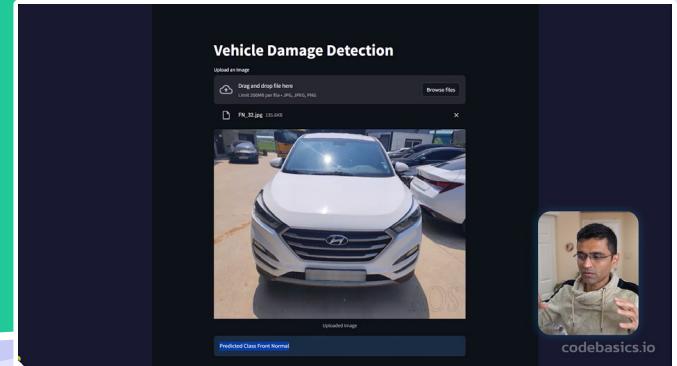
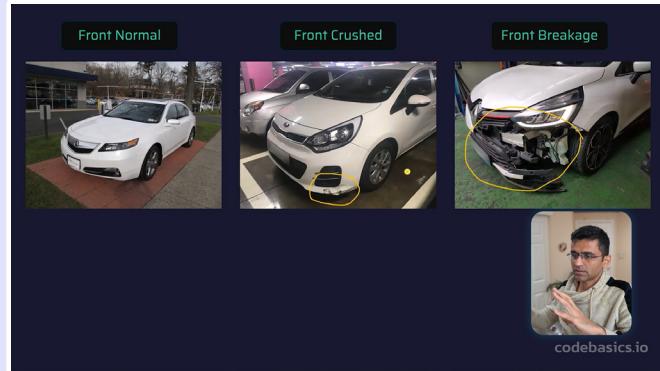
CodeX Beverage: Price Prediction

Age 30	Gender M	Zone Metro	Occupation Entrepreneur
Income Level (In L) 16L - 25L	Consume Frequency(weekly) 5-7 times	Current Brand Established	Preferable Consumption Size Medium (500 ml)
Awareness of other brands 2 to 4	Reasons for choosing brands Quality	Flavor Preference Traditional	Purchase Channel Online
Packaging Preference Premium	Health Concerns Medium (Moderately health-conscious)	Typical Consumption Situations Active (e.g. Sports, Gym)	
<input type="button" value="Calculate Price Range"/> Price Range: 200-250 INR			

By completing this project, you will:

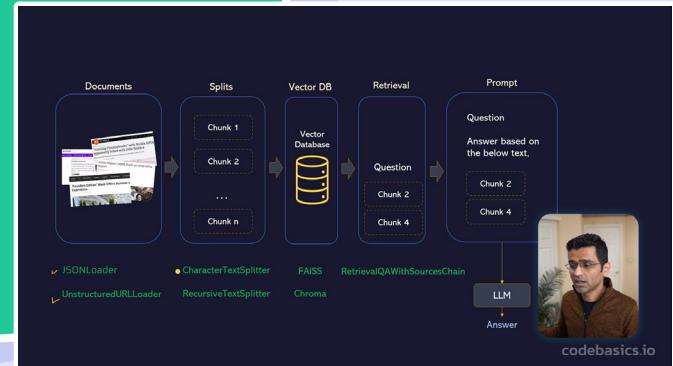
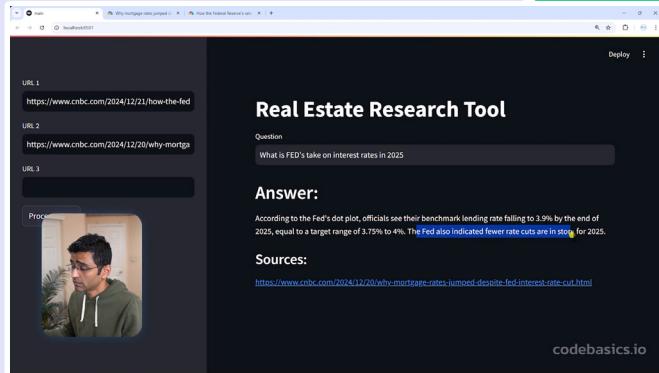
- Gain valuable insights into market pricing strategies by building a predictive model that forecasts optimal price ranges for beverages, helping businesses avoid overselling or underselling based on survey data.
- Develop essential technical skills in machine learning, including data cleaning, validation, feature engineering, and model deployment using Python, ensuring the creation of an accurate and reliable classification model.
- Understand how predictive models drive business growth and competitiveness by enabling data-driven pricing decisions, applicable across various sectors beyond the beverage industry.

09 CAR DAMAGE DETECTION USING CNN



- Gain domain knowledge in the automotive industry by developing a deep learning model to detect car damages using Convolutional Neural Networks (CNN) and Transfer Learning, covering real-world tasks like data preprocessing, model training, and deployment.
- Acquire advanced technical skills in data augmentation, fine-tuning CNN models, hyperparameter optimization using Optuna, and error analysis to improve model accuracy and performance.
- Learn how to deploy deep learning models using Python, Streamlit, and FastAPI, creating a real-time car damage detection system that can be applied in the automotive industry for automated damage assessment.

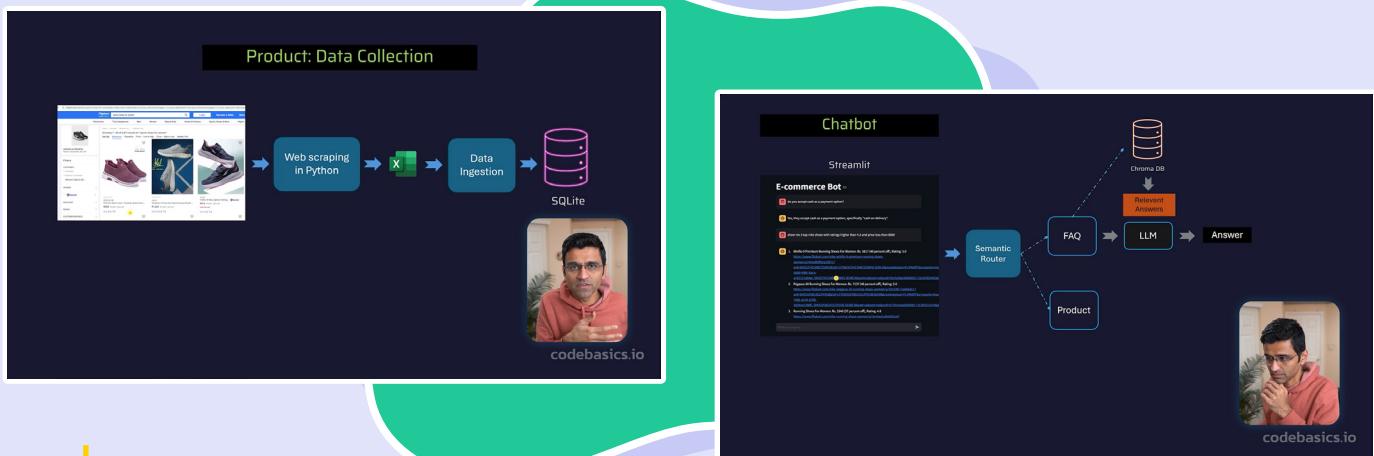
10 REAL ESTATE ASSISTANT USING RAG



- Gain domain knowledge in the real estate industry by developing a generative AI solution using Retrieval-Augmented Generation (RAG) to assist with property-related queries, applying advanced techniques for efficient data retrieval and answer generation.
- Develop technical expertise in integrating RAG with Chroma DB for data storage, implementing retrieval and answer generation mechanisms, and fine-tuning the system for accurate and relevant responses.
- Learn to deploy the solution with a user-friendly Streamlit interface, enabling seamless interaction for end-users and gaining experience in building scalable, interactive AI systems.

11

E-COMMERCE CHATBOT



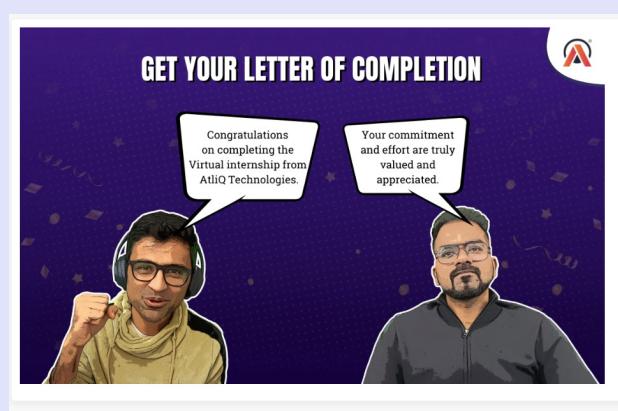
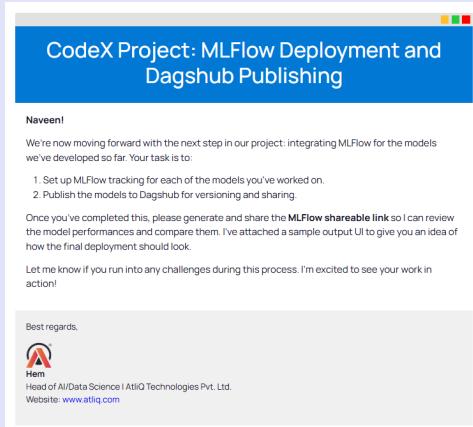
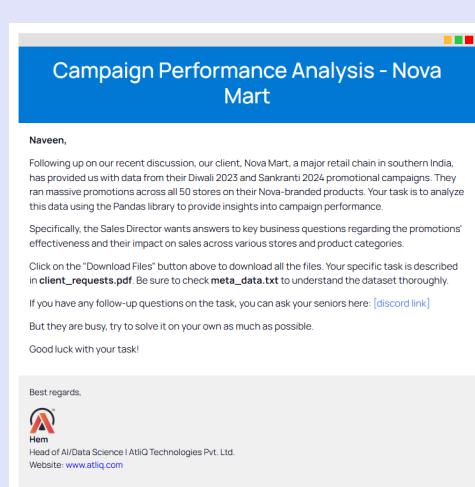
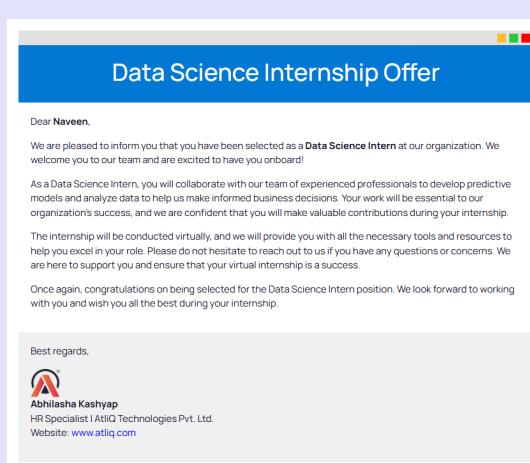
- Gain domain knowledge in the e-commerce industry by building an AI-powered chatbot capable of handling FAQs, product queries, and assisting customers with purchase decisions, utilizing advanced NLP techniques and semantic routing.
- Acquire technical expertise in integrating an SQLite database for dynamic product information handling, as well as implementing a chatbot to provide real-time responses and personalized customer assistance.
- Learn to deploy the chatbot using a Streamlit UI for seamless interactions, gaining hands-on experience in developing real-time customer-facing AI applications.

VIRTUAL INTERNSHIPS

In our virtual Internship, you'll gain practical experience in Data Science. You'll gain good knowledge in data cleaning, data validation, reporting, feature engineering, model deployment and client handling. You will also learn scrum project management and improve debugging skills. With a problem-solving mindset, you'll be ready to tackle any data challenge and make a meaningful impact.

OPTIONAL

In our Virtual Internship 2, you will work on client projects focused on AI solutions. For Stale Fruit Detection, you will develop a deep learning model to automate freshness checks in cold storage warehouses. In the RAG-Based Q&A System for Healthcare Professionals, you will build a pipeline to query PubMed articles and generate relevant responses using a Streamlit UI.



12

STALE FRUIT DETECTOR FOR A LOGISTICS COMPANY

- Gain domain knowledge in the agri-tech industry by developing a CNN-based deep learning model to detect stale fruit in cold storage warehouses, applying real-world techniques such as data augmentation, model training, and fine-tuning.
- Develop advanced technical skills in transfer learning, data preprocessing, and model optimization to enhance detection accuracy, ensuring reliable classification of fresh and stale fruit in real-world warehouse environments.
- Learn how to deploy a user-friendly Streamlit app that allows clients to upload images for real-time stale fruit detection, improving warehouse operations and quality control through automation.

13

RAG BASED Q & A SYSTEM FOR HEALTHCARE PROFESSIONALS

- Gain domain knowledge in the healthcare industry by developing a Q&A system for healthcare professionals, leveraging Retrieval-Augmented Generation (RAG) to provide accurate, context-driven answers from PubMed articles.
- Develop advanced technical skills in data ingestion, document retrieval, and RAG-based question answering using large language models (LLM) like Llama 3, integrating a robust pipeline for efficient querying and response generation.
- Learn to deploy the solution with a Streamlit UI, enabling real-time interactions for healthcare professionals to query articles and receive relevant responses in an easy-to-use interface.

DAILY DISCORD CHAT SUPPORT

Get unlimited doubt-clearing support through our active Discord community. This dedicated platform allows you to interact with fellow learners and mentors, ensuring your questions are answered promptly and fostering collaborative learning throughout your journey.

The image shows a screenshot of a Discord server interface. On the left, a channel titled 'Machine Learning' contains messages from users like Basavaraj, GAGANDEEP SINGH, and Peter Pandey. Peter's message discusses unsupervised learning and clustering. GAGANDEEP SINGH responds with a message about transitioning careers in machine learning. Basavaraj expresses gratitude. On the right, a separate window displays a project summary for 'Prudhvi' who completed a summer internship at Noetic Exposure (SINE), IIT Ropar, from May to July 2024. The project title is 'Enhanced Patient Clustering with Unsupervised Machine Learning Using CBC Data'. It details the creation of a tool to group patients based on Complete Blood Count (CBC) data to help doctors spot disease patterns. It mentions challenges faced with K-Means Clustering and Hierarchical Clustering, and the use of dendrogram analysis to find the right number of groups. An image of a doctor working with a microscope and medical data is shown.

LEARNING COMMUNITY INDIAN DATA CLUB (IDC)

Join our vibrant new community, the Indian Data Club (IDC), designed to enhance your learning experience. Participate in regular meetups, engage in weekly quizzes, and attend live sessions to stay connected, learn collaboratively, and grow with like-minded individuals.

The image shows a screenshot of a Google Meet session. The host, Y Amisha, is presenting, and the screen shows two participants: Neha Panjabi and Y Amisha. The meeting has a 'Thank You' slide with QR codes. To the right, a screenshot of the Indian Data Club LinkedIn page is shown. The page has 464 followers, was created 5 days ago, and has 52 contributors. It features a post by Y Amisha announcing an insightful session. Below the LinkedIn page, event details are listed: Date: Sunday, December 22, 2024; Time: 7:00 PM (IST); Duration: 45 minutes; Platform: Google Meet; Language: English; Hosting by: Neha Panjabi. The URL for the Google Meet is provided as <https://lnkd.in/dUejW2Y6>. At the bottom, the Indian Data Club Server Link is given as <https://lnkd.in/de598zZJ>.

PROJECT PORTFOLIO WEBSITE

Having a **PROJECT PORTFOLIO WEBSITE** is a fantastic way to stand out from the crowd and to show the proof of your work. This is the right way to convince the hiring managers to call you for an interview especially if you are a fresher or someone from a non-technical background. We advised our learners to create a portfolio website but noticed that they found it challenging to create a compelling portfolio website from scratch due to the lack of proper tools in the market.

Hence, we ended up creating a feature to automate the **PORTFOLIO WEBSITE** within our bootcamp so our learners can focus on practice and interview preparation. To meet various preferences and needs, we now offer different themes for portfolio websites. Choose the style that best represents your professional image and effectively showcases your work.

This is how your landing page would look like

More templates available in our Bootcamp

My Projects

- E-commerce Chatbot using RAG**
Domain/Function: e-Commerce
[See My Work](#)
- PYTHON PROJECT**
HOTEL BOOKINGS INSIGHTS
Domain/Function: Hospitality
[See My Work](#)
- CROP DISEASE DETECTION**
USING DEEP LEARNING
Domain/Function: Agriculture
[See My Work](#)
- Beverage Price Range Prediction**
Domain/Function: FMCG
[See My Work](#)

Naveen S
Data Scientist
EMAIL: naveen@gmail.com
PHONE: +91 9999999999
Download CV [Download CV](#)

e-Commerce Chatbot using RAG

GenAI Project

e-Commerce Chatbot using RAG

Domain/Function: e-Commerce

E-commerce chatbot POC using LLaMA3.3 & GROQ for intent-based user queries, real-time database access, and seamless interaction with FAQs & product info.

[View Project on GitHub](#)

Other Tools

Python Pytorch

E-commerce Bot

what is your refund policy?

You can return products within 30 days of delivery. Refunds are processed within 5-7 business days after the return is received.

show me top 2 NIKE shoes with rating higher than 4.5

1. Wifless Premium Running Shoes For Women Rs. 3488 (40 percent off), Rating: 5.0 [https://www.flipkart.com/wifless-premium-running-shoes-for-women-womens-shoes/p/itm00127281872209?pid=4000001272818720503&lid=LST4MTR4000001272818720503&tckid=2&utm_medium=organic&utm_source=organic&utm_campaign=Search%20-%20All%20Results&utm_term=.a1922249ecf...&HQS=TC2B18ZG0WV8B1L3THQDGTTH2720W0X5W&f=1&PA=1&rs=1&rt=r&sr=1&srchq=NIKE+shoes+for+women+below+7499&as=eq&as-show=0](#)

2. Pegasus 40 Running Shoes For Women Rs. 4288 (40 percent off), Rating: 5.0 [https://www.flipkart.com/pegasus-40-running-shoes-for-women-womens-shoes/p/itm00127281872209?pid=4000001272818720503&lid=LST4MTR4000001272818720503&tckid=2&utm_medium=organic&utm_source=organic&utm_campaign=Search%20-%20All%20Results&utm_term=.j4216ea13911...&HQS=TC2B18ZG0WV8B1L3THQDGTTH2720W0X5W&f=1&PA=1&rs=1&rt=r&sr=1&srchq=NIKE+shoes+for+women+below+7499&as=eq&as-show=0](#)

The image shows a Streamlit application interface.

Project Details

E-commerce Chatbot (Gen AI RAG using LLaMA3.3 and GROQ). This Proof of Concept (POC) showcases an intelligent chatbot designed for e-commerce platforms, enabling seamless user interactions by understanding and accurately identifying user intent. With real-time database access, the chatbot provides precise and up-to-date responses.

Key Features:

- Intent Support: FAQ Handles platform-related queries, e.g., "Is online payment available?"
- SQL: Processes real-time database queries, e.g., "Show me all Nike shoes below Rs. 3000."
- Folder Structure:

app: Contains chatbot implementation code.
web-scraping: Includes scripts for e-commerce website scraping.

Project video

CodeX Beverage: Price Prediction

Watch on [YouTube](#)

ATS RESUME BUILDER

Our ATS Resume Builder helps you create professional resumes effortlessly. Enter your details, and the tool formats them in a structured way. It ensures your resume looks clear and well-organized. Save time and focus on applying for jobs. Perfect for showcasing your skills effectively.

ONLINE CREDIBILITY

This module is all about using the internet to boost your chances of finding a job, getting better career opportunities, and freelancing. It will also teach you how to build your own personal brand for long-term benefits

By the end of this module, you will have an updated LinkedIn profile picture, banner image, and about section. Additionally, you will receive the following action steps.

- 01** **3-step framework** to build your online credibility with proven results.
- 02** 5 Advanced Tips for **super growth**
- 03** **10 post-writing templates** for high engagement
- 04** **Curated list of people** to Follow / Connect for Data Professionals

Step 1 Get your LinkedIn Profile Right



Peter Pandey
Data Scientist

Talks about #datascience
#deeplearning #machinelearning
and #python

Step 2 Engage Meaningfully



Tony Sharma
Senior Data Scientist

You are replying to Tony Sharma's post

I concur with your suggestions and would like to add a few more that would be beneficial for individuals new to the field of data science.



Step 3 Create Your Own Posts



Peter Pandey
Data Scientist

3mo • 1

Hello everyone,
In this post, I would like to share with all of you
about my approach, mindset, and the steps I took
during the execution of the project.

SMART JOB ASSISTANCE PORTAL

Through this job portal, you can review and optimize your resume, project portfolio, and LinkedIn profile with the assistance of a dedicated talent management team. You can also find relevant job openings and receive comments from the talent management team, such as which keywords to use and which projects to discuss. Additionally, there is space to add and track applications. This portal will continuously help you upgrade to ensure we assist you in the best possible way.

Smart Job Assistance Portal Beta

Home / Smart Job Assistance Portal

Building Blocks for Your Next Career Chapter

DS & AI Bootcamp:
Congratulations! Your resume has been approved. Wishing you all the best in your job search and career ahead.

DS & AI Bootcamp:
Your LinkedIn profile is currently under review. Our team will carefully evaluate it, and you will receive an update via email within 4 business days.

Job Assistance FormResume ReviewPortfolio WebsiteLinkedIn Profile Review

Job OpeningsResume Builder Beta

Job Application Tracker

Track all your job applications

0 Total Applications0% Interview Call Ratio0 Job OffersExpert Webinars

JOB APPLICATION PLAYBOOK

Spending just 20–30 minutes with this playbook can save you at least 30 days of effort in your journey.

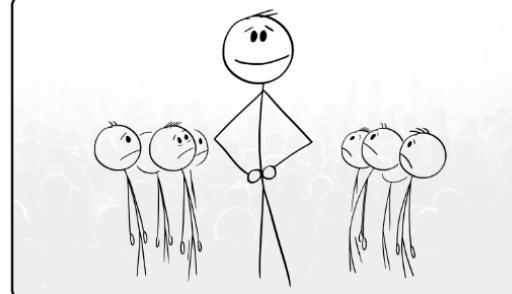
Crack the game of applying for jobs with our Playbook! From comprehensive steps to actionable tips, learn strategies that truly work and boost your chances of landing an interview call.

The screenshot shows a video player window titled "Introduction to the Job Application Playbook". The video frame displays the title "JOB APPLICATION PLAYBOOK" over a dark background. Below the video, there is a description box containing the text: "Introduction to the Job Application Playbook. In this lecture, we will discuss the Job Application Playbook and how following its strategies can increase your chances of landing an interview call." At the bottom right of the video frame, there is a yellow button labeled "Download Files". The top right corner of the video player shows "100% COMPLETED". The left sidebar contains a "Contents" menu with sections: "1: Job Assistance Support from Codebasics", "2: The Ultimate Job Application Playbook", and "2.1: Introduction to the Job Application Playbook".

Time Investment:



If you invest just **30 minutes** to go through this playbook, you can save up to 15 days on your job hunt by streamlining your applications and improving your chances of getting noticed.



Whether you're starting out or advancing your career, this playbook will help you get noticed by employers and land your dream job.

Standing out in today's job market takes more than just effort—it's about presenting yourself effectively, and this guide shows you how.

INTERVIEW PLAYBOOK

Ace your interviews with our comprehensive playbook! Follow a step-by-step guide to prepare for interviews, present your best self, clarify questions with the interviewer, and confidently handle technical queries. Learn how to showcase your skills effectively and leave a lasting positive impression. Your ultimate guide to mastering interviews with confidence.

The screenshot shows a video player interface for a course titled "Interview Playbook". The video player has a purple cover image featuring the title "INTERVIEW PLAYBOOK" and a portrait of a man. The video progress bar shows "00:01". Below the video, there is a description box: "Introduction to the Interview Preparation Playbook" and "In this lecture, we will discuss the Interview Playbook and how it can help you prepare effectively to ace your interviews." There are also buttons for "Description", "Ask Questions (on Discord)", "Write Review", "Download Files", and "Instructor". On the left, a sidebar shows a "Contents" section with three items: "1: The Ultimate Interview Preparation Playbook" (selected), "2: Interview Questions", and "3: What's Next?". At the top right, there are "DAILY LEARNING" and "100% COMPLETED" buttons, along with navigation arrows for "Prev" and "Next".



FROM FOUNDER'S DESK

Hello, I'm Dhaval Patel, and I want to share how and why I started the Codebasics YouTube channel. It all began during one of the darkest periods of my life. In **2011**, while working for Bloomberg, I was diagnosed with **Ulcerative colitis**, a painful autoimmune disease. Despite trying numerous treatments, my health continued to decline. By **2015**, I felt hopeless and **constantly in pain**.



During this time, I stumbled upon a life-changing quote:

"Life is 10% what happens to you and 90% how you react."

Determined to shift my focus and find joy, I sought an activity that I enjoyed and that allowed me to help others. **Given my teaching abilities and inclination to share knowledge, I started the Codebasics YouTube channel.** Teaching became an outlet for me, enabling me to make a positive impact and share my expertise.

With each "Thank you" comment I received on my videos, my sense of purpose and will to live grew stronger. Over time, the Codebasics community flourished, and we now have over **1.2 Million+ subscribers** on YouTube and more than **44K+ paid learners**. I've left my full-time job in the year 2022 to dedicate myself to Codebasics fully. My goal is to continue sharing my knowledge and creating a **positive impact** through this platform.

Use my story as to remind yourself that life is not always going to be easy but you can rise above that and make the world a better place to live for yourself and others.



135K+



40K +



1.2M+



495K+



info@codebasics.io



www.codebasics.io

January - 2025