**Ayush Pradhan**

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[github.com/ayushpradhan-dev/Data-Science-and-Analysis-Projects](https://github.com/ayushpradhan-dev/Data-Science-and-Analysis-Projects)

**Personal Profile**

A highly motivated data professional with expertise in data science, analytics, and financial modeling. I have experience leveraging machine learning, statistical analysis, and business intelligence tools to extract actionable insights and support data-driven decision-making. My projects have involved building predictive models, optimizing data pipelines, and designing visual analytics dashboards that translate complex data into meaningful business strategies. With a strong foundation in both technical skills and economic principles, I am eager to apply my expertise in data-driven problem-solving in dynamic environments, whether in consulting, finance, or technology sectors.

**Education**

**King’s College London**

September 2024 – Present (Expected 2025)

* Degree: MSc Data Science
* Modules: Statistics for Data Analysis | Computer Programming for Data Scientists | Machine Learning | Pattern Recognition, Neural Networks and Deep Learning | Databases, data warehousing and information retrieval | Big Data Technologies | Data Visualization

**Royal Holloway, University of London**

September 2019 – July 2022

* Degree: BSc Financial and Business Economics

Grade: First Class Honours

* Key Modules:

Quantitative Methods | Microeconomics | Macroeconomics | Corporate Finance | Financial Markets and Institutions | Financial Economics | Industrial Economics | Industrial Growth and Competition

**Skills**

* **Programming & Data Analysis:** Python (Pandas, NumPy, matplotlib,scikit-learn, TensorFlow), R (Tidyverse, ggplot2), SQL (advanced queries, CTEs & Window Functions), Git version control.
* **Machine Learning & AI:** Supervised and Unsupervised Learning (SVM, K-means, kNN, Tree-Based-Methods), Neural Networks (MLP, CNN, RNN).
* **Data Engineering & Management:** Relational databases (MySQL), NoSQL (MongoDB), Data Warehousing, Cloud Computing (AWS), ETL Pipelines.
* **Business Intelligence & Data Visualization:** Familiar with Tableau and Power BI, experienced in R ggplot2, Matplotlib, and dashboard development for data storytelling.
* **Statistical Analysis:** EDA, A/B Testing, Regression Models (Piecewise, Locally Weighted, Logistic), Hypothesis Testing, Bayesian Statistics.
* **Financial & Economic Modeling:** Market Trend Analysis, Financial Data Interpretation, Time-Series Forecasting, and KPI Analysis.

**Projects / Applied Coursework**

**Retail Sales Analysis & Report:**

* **Objective:** Assessed the impact of a new store layout on sales to provide data-driven recommendations.
* **Implementation:** Conducted Exploratory Data Analysis (EDA) using histograms, scatter plots, and boxplots. Built a multiple linear regression model in R, controlling for store type and staff turnover.
* **Results:** Identified key factors influencing sales trends and provided actionable insights for store optimization.

**COVID-19 Data Analysis & Visualization:**

* **Objective:** Analyzed COVID-19 case trends over time to understand infection patterns and regional variations.
* **Implementation:** Queried a public API to collect real-time COVID-19 data, processed it into Pandas DataFrames, and applied rolling averages. Created dynamic visualizations to display infection trends.
* **Results:** Highlighted significant changes in case numbers over time, identifying periods of rapid spread and decline, which could support public health decision-making.

**Natural Language Processing (NLP) on Wikipedia Data:**

* **Objective:** Extracted insights from Wikipedia text data on ACM Turing Award winners using NLP techniques.
* **Implementation:** Scraped data using WikiData APIs, applied tokenization,stemming, lemmatization, stopword removal, analysed bigrams and trigrams.
* **Results:** Identified linguistic patterns and created word frequencyvisualizations using Matplotlib for comparative analysis.

**Handwritten Digit Classification Using Convolutional Neural Networks:**

* **Objective:** Built a deep learning model to classify handwritten digits.
* **Implementation:** Developed a CNN model using TensorFlow/Keras with convolutional, pooling, dropout, and dense layers. Applied hyperparameter tuning and batch normalization to improve performance.
* **Results:** Achieved high classification accuracy of 99.70%, demonstrating the power of CNNs in image recognition tasks.

**Certifications**

**Google Data Analytics Professional Certificate**

Oct 2023 – Jan 2024

* Gained hands-on experience in data aggregation, cleaning, and organization with SQL and R to identify trends and relationships within data.
* Fluency with data visualization tools in tableau and R using the ggplot2 package to communicate findings.

**The Data Science Course: Complete Data Science Bootcamp, Udemy**

March 2024 – May 2024

* Applied K-means clustering for marketsegmentation and data standardization.
* Studied Bayesian inference, probability distributions, combinatorics, and both descriptive and inferential statistical methods.