

# NISHANT RAI

DATA SCIENCE | ANALYTICS

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<https://github.com/NishantRai567>   
Portfolio: <https://nishantrai567.github.io/>

**MOTIVATION** *I am passionate about **solving business problems** using Data Science & Analytics. I systematically & creatively use my skillset to **add tangible value** to the team, the business, and the end-user. I am constantly learning, and always looking to improve.*

**EDUCATION** **MSci in Chemistry**  
2020 - 2024 - University of Birmingham, UK  
First Class Honours  
Head of School Prize for Outstanding Academic achievement

**A-Levels**  
2016 - 2018 - Lawrence Sheriff School, UK  
Grades: A\* (Chemistry), A\* (Biology), A\* (Mathematics), A (Further Mathematics - AS Level)

**SKILLS & TOOLS**

**Programming:** SQL, Python (Base, Pandas, Numpy, Matplotlib, Scikit-Learn)  
**Tools:** Excel, Tableau, Github, AWS (S3, Lambda, IAM, EC2, SageMaker, RDS, DynamoDB, Glue)  
**Math:** Linear Algebra, Statistics (Hypothesis Testing, AB Testing, Central Limit Theorem, Distributions)  
**Machine Learning:** Linear Regression, Logistic Regression, Decision Trees, Random Forest, KNN, k-means, PCA, Association Rule Learning, Causal Impact Analysis, Neural Networks

**PROJECTS** **"You Are What You Eat" Customer Segmentation**

- Used **k-means clustering** on grocery transaction data to split out customers into distinct "shopper types" that could be used to better understand customers over time, and to more accurately target customers with relevant content & promotions

## Quantifying Sales Uplift With Casual Impact Analysis

- Applied **Causal Impact Analysis** on grocery transaction data to measure the impact of a "Delivery Club" initiative, identifying a **41.1% uplift in sales** for members compared to a control group, and outlined next steps for investigating seasonality, long-term trends, and category-level spending changes to refine future marketing strategies.

## A/B Testing for Delivery Club Mailer Campaign

- Used **Python** (Pandas, SciPy) to conduct a **Chi-Square Test** for Independence comparing signup rates between low-cost and high-cost mailer groups. Cleaned and aggregated campaign data into a 2x2 contingency table, and provided actionable insights to the client, showing that the difference in signup rates was not statistically significant, helping optimize future marketing strategies.

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## PROJECTS (Con't)

### E-Commerce Power BI Report

- Performed **ETL** on a 120,000-record e-commerce dataset, extracting and transforming data from **Azure Storage** and **SQL** Database into **Power BI**. Created a star schema model, implemented 25 **DAX** measures, and developed a 4-page report with 40 visualizations to generate actionable insights. Additionally, constructed 5 **SQL** queries for deeper insights outside Power BI.

### Exploratory Data Analysis: Online Shopping in Retail

- Built a custom **Python** class using **SQLAlchemy** to extract and clean 54,000-record retail dataset. Conducted data preparation with **Pandas**, including missing value imputation, outlier removal, and transformation. Analysed 2,000+ records, answering 10 business questions and identifying key trends to inform marketing strategies and improve customer targeting.

## COURSES & CERTS

### Data Science Professional Certification (Data Science Infinity)

**Actionable Learnings:** Developed skills in data manipulation with **SQL**, statistical analysis (A/B testing), and **Python** for analysis and visualization. Applied machine learning algorithms (regression, classification, clustering) and built ML pipelines for preprocessing and deployment using **Streamlit**. Gained experience in data preparation (missing values, encoding, scaling) and model validation. Utilized **Tableau** for data visualization and **GitHub** for version control, while translating business problems into data-driven solutions.

### Data Analytics (AiCore)

**Actionable Learnings:** Specialized in data analytics, mastering **Python** for data cleaning, exploration (EDA), and manipulation using **Pandas**. Gained expertise in statistical analysis and visualizing data insights with **Power BI**. Developed skills in version control with **GitHub** and cloud computing with **AWS**. Learned best practices for handling various data file types and building data-driven solutions.

## EXPERIENCE **AI Prompt Engineer - Outlier**

DECEMBER 2024 - PRESENT

- Designed complex chemistry prompts to evaluate and challenge LLM reasoning capabilities.
- Identified and addressed domain-specific knowledge gaps, improving model accuracy across 15 scientific inquiries.
- Conducted real-time testing to enhance AI performance and reasoning in chemistry.

### Team Member - Dominos

SEPTEMBER 2018 - OCTOBER 2019

- Improved team communication, reducing order processing time by 15% during peak hours while maintaining 95%+ customer satisfaction.
- Analysed workflows and implemented solutions, increasing order throughput by 30+ orders per hour during high-demand periods.