

# Muhammad Zohaib Irfan

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## EDUCATION

### The Hong Kong University of Science and Technology

New Territories, HK

*Bachelors of Engineering, Computer Science, Minor Social Sciences*

*Aug 2023 – May 2027*

- Relevant Courses: Introductory Business Finance, Microeconomics, Linear Algebra, Discrete Mathematics, Programming with C++, Applied Statistics, Case Analysis and Product Innovation.

## EXPERIENCE

### Undergraduate Research Assistant

June 2024 – Aug 2024

*The Hong Kong University of Science and Technology*

*Hong Kong, HK*

- Created a consistent spreadsheet for multiple African countries from multiple data sources to highlight overlapping data as well as registering new available data
- Categorized the unique geographical regions of each country using R code with each new dataset available for that country
- Highlighted what data sources were available for each country, such as Afrobarometer, Census and Geographical

### Undergraduate Research Assistant

June 2023 – Aug 2023

*Habib University*

*Karachi, PK*

- Assisted professor in identifying problems with existing introductory programming course
- Redesigned the entire course from scratch focusing on problem solving working in a team setting
- Created multiple problem sheets written in L<sup>A</sup>T<sub>E</sub>X to be used as part of the teaching curriculum

## PROJECTS

### TEMG 3950 | *Case Analysis and Start-up Project*

Sept 2024 - Nov 2024

- **Part 1: Product Design and Innovation (Start-up Project)**
- Worked on a start-up project over 7 weeks, focusing on research, strategy, and pitching the concept to stakeholders.
- Applied Design Thinking and business strategy frameworks, including the Business Model Canvas and Value Proposition Canvas, to identify and address customer needs.
- Performed market analysis using TAM, SAM, and SOM frameworks to evaluate market potential and identify opportunities for growth.
- **Part 2: Case Analysis and Consulting Frameworks**
- Utilized key consulting frameworks such as McKinsey 7's, Blue Ocean Strategy, Chernev's 5's, and Porter's 5 Forces to analyze business challenges and develop strategic solutions for given assignments.
- Analyzed Zespri, a New Zealand-based company, and performed a McKinsey 7's analysis on their vulnerability to weather disasters and provided solutions as a course assignment.

### Star Classification | *Python, Scikit-learn, Jupyter Notebook*

Jan 2024

- Used a dataset to predict if a given star is a giant or a dwarf using machine learning algorithms.
- Utilized K-nearest Neighbors, Support Vector Machines, Random Forests, Logistic Regression, and Decision Trees.
- Compared metrics such as precision, recall, F1-score, and confusion matrices for each algorithm and plotted boundary classification diagrams for visualization.

### Chase Game | *Python, Pygame*

Dec 2023

- Implemented multiple graph helper functions such as adding edges, defining weights, and getting node neighbors.
- Utilized Dijkstra's algorithm to find the shortest path between the chaser and player.
- Utilized the Pygame library and sound module for enhanced interactivity.

## TECHNICAL SKILLS

**Languages:** C++, Python, SQL, R

**Frameworks and Libraries:** Pandas, Numpy, ScikitLearn, Flask, Pygame, Tensorflow, Keras, Wordpress

**Developer Tools:** Git, Github, L<sup>A</sup>T<sub>E</sub>X