
ZAIN YOUSEF

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EDUCATION

University College London (UCL)
BSc Statistics - Predicted grade: 2:1

Sep 2018 - May 2021

- Recipient of the **E.J. Gumbel Scholarship**, a three-year academic scholarship, from the Statistical Science department at UCL.
- Third year project: **Actuarial Models for Mortality**.

Stanwell Comprehensive School

Sep 2011 – Aug 2018

- **A-Levels**: Mathematics (A*), Further Mathematics (A*), Welsh Baccalaureate (A) and Economics (B).
 - **GCSEs**: 16 GCSE's all A*-C including an A* in Mathematics, B in English Language and B in English Literature.
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PROFESSIONAL EXPERIENCE

Cwm Taf Morgannwg (CTM) University Health Board, NHS Wales
Data Analyst (Full-time)

Jul 2020 –

Created and maintained automated reporting systems for COVID-19 for both CTM and Wales. The reports I produce are used as a **standard agenda items within meetings between health board executives, local government and the South Wales Police Force**. The purpose of the reports is to **provide in meeting analytics to inform decision making** as important as whether to lockdown an area or not.

Key Responsibilities and Achievements:

- Created the reporting systems through combining use of R Markdown and Microsoft SQL Server by setting up an ODBC link.
- The reports include various **heat maps** in which Lower Super Output Areas/ Built-Up-Areas/ Local Authorities are highlighted dependant on corresponding figures for positive cases, cases per 100,000 population and positivity rate.
- Created **population standardised 99th percentile limits** for COVID positive tests for each Built-Up-Area, these were then used to indicate which local areas were of concern and required investigation. These percentiles are also visualised with weekly data using Statistical Process Charts (SPC).
- I was also responsible for **producing weekly reports for antibody testing** within CTM and Wales for Public Health Wales and the health board.
- Involved in a project **locating optimal locations for COVID-19 testing centres** in CTM.
- Created an additional reporting system for **hospital capacity** – includes how many COVID beds are currently in use in CTM hospitals, exponential growth rate charts for hospital admissions and demographics of admissions.

MYPINPAD

May 2019 – Nov 2019

Statistician (Contractor)

Undertook a project assisting MYPINPAD's securities and compliance departments to achieve a Payment Card Industry Data Security Standard (PCI) certification for MYPINPAD's mobile payment authentication solution to allow the service to go to market.

Key Responsibilities and Achievements:

- Completed **combinatorics and probability calculations** to analyse the risk of their mobile payment solution.
- Presented my analysis to the CEO of MYPINPAD and a third-party certification organisation.
- Certification was then obtained in January 2020.

Cardiff & Vale University Health Board, NHS Wales

Jun 2019 – Sep 2019

Data Analyst (Full-time)

Worked across two main projects: 1) **creating an automated reporting system** to analyse the performance of the Community Resource Therapy (CRT) team and 2) **producing a discrete event simulation (DES) model** to support the launch and running of an upcoming major trauma centre.

Key Responsibilities and Achievements:

- Analysed the performance of the Community Resource Therapy (CRT) team with **time-series plots** based on various measures, for example: monthly discharge rate, monthly acceptance rate, number of hospital beds used, etc. The system automatically produced the report each month automatically, I used the programming language **R with R Markdown** to create this system.

- Used **SIMUL8** to produce a **discrete event simulation (DES) model** for an upcoming major trauma centre in Cardiff. This model simulated patient inflow/ outflow, resources used and expenses within any given timeframe. In order to create the DES model, I used **Microsoft Excel** to calculate probability density functions (pdf) based on existing data.

Cardiff & Vale University Health Board, NHS Wales

Jul 2018 – Sep 2018

Data Analyst (Full-time)

Completed a project for **creating an automated system to analyse and monitor the mortality rate within each different medical division** within NHS Wales. The purpose for the project was to allow the NHS Wales executives to have a greater understanding of the mortality rates within different divisions and to recognise how much different factors collectively affect mortality.

Key Responsibilities and Achievements:

- I used the programming language R with R Markdown to create a system which automatically produced the reports for each medical division from a dataset containing mortality data on over 100 different medical departments within University Hospital Wales (UHW) and other surrounding hospitals.
- The reports included **SPC chart** plots which were used to analyse monthly averages for aspect like mortality rate, expected mortality rate, length of stay, etc. The SPC charts included 95% confidence intervals and therefore any irregular months would be flagged to the Information's department at the health board for review.
- A **multivariate logistic regression model** was also included in each report which I created in order to recognise the extent to which each variable (for example: consultant treating the patient, risk of mortality, age of patient, hospital treated at, etc.) affects the mortality rate each department.

OTHER EXPERIENCE

Microsoft

Jan 2020 – Jan 2020

Insight Day

Invited to an insight day at the Microsoft offices in Paddington. During this day we learnt about how Microsoft's applies their work in quantum computing and data science to areas like bioscience and energy.

Microsoft X American Express

Nov 2019 - Nov 2019

Data Science Hackathon Winner

Devised a technical solution with my group for aspects which affect delinquencies and defaulting on credit cards based on American Express data. The solution included various regression models which we created using Python, R and Microsoft Azure. The competition was also in collaboration with UCL Data Science society.

Vale Tennis Academy

Jan 2018 – Sep 2018

Tennis Coach

Coached children (aged from 4-12 years old) to play tennis every weekend.

Greggs

Aug 2016 – Sep 2017

Team Member

Multidisciplinary role including front of house and back of house, including working on the till and making pasties.

TECHNICAL SKILLS

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| • R (advanced) | • SIMUL8 (intermediate) | • Microsoft Excel (advanced) |
| • R Markdown (advanced) | • Java (basic) | • SAS (basic) |
| • Microsoft SQL Server (basic) | | |

OTHER QUALIFICATIONS

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| • i2c Level 1 Qualified Tennis Coaching Assistant | • Bronze, Silver and Gold Duke of Edinburgh awards |
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PROJECTS

- <https://zainweb.netlify.app>
Side project using R Markdown in combination with GitHub, Hugo and Netlify to produce a personal portfolio website (work in progress).
- <https://techcommunity.microsoft.com/t5/educator-developer-blog/ucl-data-science-society-microsoft-hackathon-challenge-winners/ba-p/1154068?fbclid=IwAR0xarfE0K3kWy-inlCdaeKC8qRMC94BBDhGZwsiUIGltdXMPDnLLeeS3Ko>
Microsoft blog post about on how we used American Express data and our findings.