# EMMA LUK

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## >> DATA SCIENCE | MACHINE LEARNING

## MOTIVATION

*My passion lies in leveraging Data Science & Machine Learning to solving business problems. I strategically apply my skillset to add tangible value to businesses, and users alike. I am dedicated to continuous learning and enhancement. A seasoned Data Analytics professional with a Master's in Data Science and Analytics, specialising in machine learning, big data, and visual analytics technologies.*

## SKILLS & TOOLS

Programming: Python (Base, Pandas, Numpy, Matplotlib, Scikit-Learn, Keras), SQL, R, SAS

Machine Learning: Linear Regression, Logistic Regression, Decision Trees, Random Forest, KNN, k-means, PCA, Association Rule Learning, Causal Impact Analysis

Other: Statistics, Github, Data Visualisation, MS Office, Tableau, Jupyter Notebook, AWS, Google Cloud Platform

## EXPERIENCE

### Data Scientist - BAE Systems plc, Portsmouth

2021 – 2023

**Achievements:**

- Successfully implemented a **data pipeline** that reduced data processing time by 30%.
- Developed a data cleansing algorithm that improved data accuracy by 20%.
- Created interactive dashboards that enhanced data **visualisation** and improved decision-making processes.
- Received recognition for outstanding contribution to a complex data migration project, ensuring smooth transition and minimal downtime across Canadian/US and European markets.
- Led a **cross-functional** team in the successful delivery of a data-driven project, resulting in cost savings of $100,000 for the client.
- Collaborated with cross-functional teams for data requirements analysis.
- Designed and implemented efficient data models and structures.
- Developed and maintained data pipelines and ETL processes.
- Conducted data cleaning, transformation, and validation.
- Created reports and visualisations for data insights.
- Assisted in the development of data governance policies.
- Worked on client projects, ensuring timely delivery of high-quality data solutions.

### Massive Analytic Ltd, London

2020 – 2020

**Achievements:**

- Successfully developed and deployed an LSTM-based sequence prediction model, achieving a prediction accuracy of 95% and outperforming previous models by 15%.
- Led a team in designing and implementing a control unit for a self-driving car, resulting in a 20% reduction in accidents during testing.
- Received recognition for designing intuitive user interfaces and creating engaging visualisations, enhancing client demonstrations and contributing to increased satisfaction.
- Worked on developing Sequence Prediction Models using Deep Learning techniques like **Long Short Term Memory Networks (LSTM)** and **Fuzzy Time Series**.
- Built and developed control units for self-driving cars using advanced data science and deep learning techniques.
- Created mock-ups and prototypes for client demonstrations, effectively showcasing the capabilities and potential of the developed solutions.

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## EXPERIENCE

### Software Developer - Public Health England (PHE), Department of Health
2016 – 2018

**Achievements:**

- Successfully designed, developed, and supported analytical systems, contributing to improved public health decision-making.
- Applied technical expertise in SQL Server, SSIS, and T-SQL to build and support data warehouses/marts.
- Influenced testing and implementation processes, leading to enhanced system performance and quality.
- Utilised data science and data visualisation techniques to improve the usability and accessibility of health-related data.

### Experience Highlights 2001-2014:

**Achievements:**

- Executed Web Development and Design in finance, insurance, and automotive, emphasizing E-commerce and Digital Product Development. Proficient in accelerating A/B Testing and Multivariate Testing strategies at AXA Wealth, Bristol, Mercedes-Benz, and Hargreaves Lansdown Stockbrokers & Asset Management.

## EDUCATION

### MSc (Data Science and Analytics)
2018 - 2020 - Brunel University, London

Actionable Learnings:

- High Performance Computational Infrastructures in Java (Hadoop & NoSQL)
- Data Visualisation (dashboard and infographic design using Tableau & Microsoft Power BI).
- Big Data Analytics covers data mining alongside machine learning techniques (e.g. clustering, regression, support vector machines, boosting, decision trees and neural networks) etc
- Quantitative Data Analysis & Statistics with R

MSc - specialising in machine learning, big data and visual analytics technologies.

**MSc (Computer Science)**
2003 - 2006 - University of Bristol (The Top 28 Universities in the World, 2012)

## COURSES & CERTS

### DSI Data Science Professional Certification
**2023 - PRESENT**

Actionable Learnings: Extracting & manipulating data using SQL. Application of statistical concepts such as hypothesis tests for measuring the effect of AB Tests. Utilising Github for version control, and collaboration. Using Python for data analysis, manipulation & visualisation. Applying data preparation steps for ML including missing values, categorical variable encoding, outliers, feature scaling, feature selection & model validation. Applying Machine Learning algorithms for regression, classification, clustering, association rule learning, and causal impact analysis for measuring the impact of an event over time. Machine Learning pipelines to streamline the ML pre-processing & modelling phase. Deployment of a ML pipeline onto a live website using Streamlit. Using Tableau to create powerful Data Visualisations. Turning business problems into Data Science solutions.

### Certified Scrum Master®
2017 (Credential ID: 000691196) Scrum Alliance,