

## Profile Summary

- Seasoned Machine Learning Specialist with an esteemed track record of executing complex projects, including an AI-powered podcast summarizing application and pioneering movie recommendation algorithms.
- Proficient in the complete lifecycle of AI & Machine Learning development, from data preprocessing to evaluation.
- Demonstrated expertise in Natural Language Processing, Computer Vision, and Deep Learning, utilizing Python-based frameworks like TensorFlow, Keras, and Scikit-learn.
- Comprehensive experience in cloud platforms such as AWS and Alibaba Cloud, underscoring a solid foundation in AI & cloud infrastructures.
- Robust mathematical background, complemented by advanced knowledge in statistics and probability.
- Adept at harnessing the synergy of cross-functional teams to align with business goals, fortified by an M.Sc. in Artificial Intelligence. Passionate about converting intricate business challenges into actionable AI-driven solutions.
- Engaged collaborator with strong interpersonal skills, able to influence and align multiple teams with conflicting priorities to drive progress under aggressive time constraints.

## Education

**Birmingham City University**  [M.Sc. in Artificial Intelligence](#) **Distinction** Birmingham, UK achieved. Oct 2023

**Modules:** Computing for AI, Deep Learning, Applied AI, Impact of AI, Machine Learning, Data Visualization.

**Dissertation Projects:** Development of movie recommendation algorithms and machine learning models for revenue prediction.

**London South Bank University**  [B.A. \(Hons\) in Business Management 2.1](#) London, UK achieved. June 2009

**Modules:** Business Analysis and Management, Survey Sampling, Analytical Decision Making, Statistical Techniques for Business.

## Technical Skills

**Programming and Development:** Python, JavaScript, HTML, CSS

**Machine Learning and Deep Learning Frameworks:** Scikit-learn, TensorFlow, Keras, Pyro

**Data Manipulation and Visualization:** Numpy, Pandas, Matplotlib, Seaborn, Tableau

**Databases and Data Storage:** MongoDB, MySQL

**NLP & Computer Vision:** Large Language Models, Speech to Text, PCA

## AI & Machine Learning, Data Science Projects Experience

**AI Powered App for podcast summarizing**   2023

- Developed an AI-powered application within a team using Large Language Models and Streamlit to generate personalized weekly newsletters summarizing podcast episodes, assisting listeners in selecting relevant episodes based on guests, topics, and highlights.
- Designed a three-component architecture to extract and transcribe podcast content, convert the function to a backend, and develop a frontend for user experience using Streamlit.
- Incorporated Large Language Model (LLM) and Speech to Text model to optimize information extraction.
- Leveraged Modal Labs as the deployment service, ensuring efficient podcast discovery for listeners.

**Movie Recommendation Systems**   2023

- Pioneered AI-centric recommendation algorithms, deploying techniques like KNN-based Collaborative Filtering and advanced Bayesian Machine Learning, to craft highly personalized movie suggestions through data-driven insights.
- Handled extensive data preprocessing tasks, including missing value imputation, outlier detection, and feature engineering, on a dataset comprising various movie attributes and user ratings.
- Implemented Probabilistic Matrix Factorization using Pyro, employing Bayesian methods to provide a probabilistic framework, and utilized Stochastic Variational Inference for scalable and effective model training.
- Conducted comprehensive model evaluation, achieving an MSE of 0.85, MAE of 0.65, RMSE of 0.92, and  $R^2$  of 0.78, to diligently select the most predictive model and ensure precise movie recommendations.
- Optimized models via hyperparameter tuning, particularly focusing on the 'number of neighbors' in KNN and Neighborhood-based models to enhance recommendation quality.
- Employed a robust data cleaning and exploration process, managing datasets with up to 45,466 entries across multiple files, ensuring coherent, unified, and clean data for model training and evaluation.

**ML Regression Model Development for Movie Revenue Prediction**   2023

- Developed and tuned multiple regression models, including Random Forest, Support Vector Regression (SVR), and Ridge Regression, for predicting movie revenues based on various features.

- Implemented XGBoost, a gradient boosting framework, to further enhance predictive performance and achieved notable improvement in R-squared and error metrics over traditional models.
- Achieved an R-squared value of 0.6873 using the Random Forest Regressor on the test dataset, indicating approximately 69% explanatory power on movie revenue variance.
- Enhanced the SVR model through hyperparameter tuning, elevating the R-squared value from 0.5526 to 0.5954 on the validation set and achieving an R-squared of 0.5834 on the test set.
- Employed and optimized a Ridge Regression model, obtaining an R-squared value of 0.5928 on the test dataset, elucidating 59.28% of the variance in movie revenues.
- Validated models' efficacy and generalizability using separate datasets, achieving key metrics like MAE of 0.3208, MSE of 0.3165, RMSE of 0.5625, and an R-squared of 0.6873 with the Random Forest Regressor on the test data.
- Explored opportunities for further enhancement by investigating alternative regression models and additional feature engineering to improve predictive accuracy.

## NLP Sentiment Analysis Prediction [↗](#)

2023

- Developed and trained a sentiment analysis model for tweets, leveraging Support Vector Machines (SVM) and Decision Trees, through rigorous data preprocessing, feature extraction, and hyperparameter optimization, achieving an impressive accuracy of 87.8% with the SVM model.
- Employed advanced NLP techniques such as Tweet Tokenization, Spacy lemmatization, and removal of non-textual elements, alongside effective usage of bag-of-words, TF-IDF, and n-grams, leading to the creation of robust models.

## Image Recognition with Computer Vision for Cats & Dogs Prediction [↗](#)

2023

- Utilized Python and various feature extraction techniques to design image classification models, improving data quality and pre-processing speed, and achieving a classification accuracy of ~72% with the PCA model.
- Applied the PCA model to a new set of images and disseminated the findings and methodology through a comprehensive blog post and Python notebooks on Google Colaboratory.

## NLP Deep Learning for Poem Creation [↗](#)

2023

- Devised a sequential neural network model for generating poems in the style of William Blake, leveraging syntactical and semantic analysis techniques and achieving an exceptional BLEU score of 99.8%. Model structure encompassed an embedding layer, bidirectional LSTM layers, dropout layers, and a dense layer with SoftMax activation.
- Identified opportunities for model improvement by refining sequence length, reconsidering the use of bidirectional LSTM layer, and implementing alternative sampling methods such as Top-K or Nucleus.

## Professional Experience

### Ginger Nut Training [↗](#) [Apprenticeship Coach](#)

London, UK

Oct. 2021 - Present

- Spearheaded course development including Level 3 Digital Marketer and Content Producer, Level 4 Data Analyst achieving 90% retention, 15% increased user interaction, and accolades.
- Streamlined resource redesign and leveraged email marketing, web content, and social media, reducing launch time by 90% and boosting user interaction by 15%.

### Pearson [↗](#) [Independent Assessor](#)

London, UK

Sep. 2020 - Sep. 2021

- Orchestrated end-to-end assessment planning, mapping, and tracking for Pearson, ensuring alignment with quality management standards and metrics, thereby achieving a record of 100% timely student assessment completion.
- Pioneered the product vision for Pearson's suite of assessment tools, incorporating user research, market trends, and competitive analysis to ensure a customer-centric approach.

### Arch Apprentices [↗](#) [Learning & Development Specialist](#)

London, UK

Feb. 2015 - Aug. 2020

- Mentored and trained 200+ apprentices in digital marketing, content production, and data analysis, collaborating with multiple firms such as Omnicom, StarCom, Publicis, Lloyds TSB, and Google, achieving a 100% student pass rate.
- Conducted over 400 customer interviews and data analysis, identifying learner pain points and developing relevant solutions, leading to exceptional and positive learning experiences.

### IGNL Group [↗](#) [Digital Marketing Manager](#)

London, UK

Sep. 2009 - Jan. 2015

- Analyzed CRM strategies and Customer Journey Mapping touchpoints, managing the online store's performance and analytics reporting across platforms like social media, corporate website, and SQL database.

## Certifications

Chartered Institute of Marketing [CIM Level 4 Award in Digital Marketing](#) - Google [Level 4 Square Online](#) - Google Individual Qualification and Analytics - IBM Python for Data Science - CoRise: [Crash Course in SQL and Python](#) - British Computer Society (BCS) [Level 3 Principle of Coding](#) - BCS [Level 3 Marketing Principles and Digital Marketing](#) - AWS Machine Learning Foundations [2022](#) - Alibaba Cloud Practitioner, [Pendo Product Management & Product Analytics](#) - [Udacity AI programming with Python](#), Programming for data science with Python