MARAH SHAHIN

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SUMMARY

Unrestricted right to work in the UK.
Dynamic and results-oriented Senior level Machine Learning Engineer with over four years of experience. Marah's expertise lies in designing and implementing comprehensive machine learning solutions, optimisation, and mathematical models. Marah excel at communicating complex ideas clearly to various audiences, a skill proven through successful projects at companies like Deloitte, Hilti, Aurecon, WSP, and the University of Auckland. Passionate about using data to drive business decisions and innovation.

EDUCATION

Bachelor of Engineering (First Class Honours), Engineering Science   University of Auckland
Honours Thesis title: Optimal Experimental Design for Understanding Burn Injuries, A+
Relevant Coursework: Data Science, Machine Learning, Python, Operations Research.
Dean's Honours List, First in Class Award.

Bachelor of Commerce, Majors: Finance and Innovation & Entrepreneurship   University of Auckland
First in Class Award, Certificate of Outstanding Achievement.

SKILLS

Technical Skills	Python, Pandas, TensorFlow/Keras, PyTorch, BERT, AWS SageMaker, Tableau/Power BI
Fields	Machine Learning, Analytics, Generative AI, Optimisation, Data Science & Visualisation
Soft Skills	Communication, Presentations, Problem-Solving, Leadership, Stakeholder Management

EXPERIENCE

Founding Machine Learning Engineer   Mar 2024 - Present
TLD Engineers   *Remote*

- Leading and building ML/AI and data science capabilities for a start-up.
- Implementing ML and optimisation models into road and traffic engineering projects to increase efficiency and accuracy.
- Optimised Road Project Prioritisation Using K-Means Clustering - implemented K-means clustering to prioritise road projects, resulting in a 14% increase in efficiency and a 6% reduction in accidents.

Artificial Intelligence & Data Specialist   Feb 2022 - Mar 2024
Deloitte   *AKL, NZ*

- Promoted from Analyst to Specialist in one year for exceptional client-facing and implementation work.
- Worked with 15+ clients across financial services, insurance, public, healthcare, logistics, and TelCo sectors, handling and delivering projects to improve as/is and to/be processes leveraging skills such as AI/ML, GenAI, Python, PowerBI, AWS, SQL, data analysis, ServiceNow, and JavaScript.
- Directed a team to develop a containerised AI-driven (SQL, Python, APIs, Docker, Kubernetes, Hugging Face, GPT-2, SpaCy, Agile) data quality tool, improving data accuracy by 28%.
- Spearheaded a Generative AI initiative (LLMs, SageMaker, Bedrock, LLaMA, Titan, Claude, LangChain, Agile, Jira) for a major insurance client, cutting handling time by 26% and boosting employee satisfaction by 10%. POC replica developed on GCP.
- Enhanced company/team eminence through topical numerous AI/ML blogs and thought leadership pieces, hosted events, and presentations related to ethical AI, risks, data modernisation in the era of AI, ML customer segmentation, MLOps/AIOps, open vs. closed source LLMs, etc

- Uplifted AI/ML capabilities across the firm through hosting KnowledgeShares, compiling training resources, developing and sharing curated learning pathways tailored by expertise level, and allowing juniors to shadow.
- Mentored junior data scientists providing a safe environment, guidance, and support to enhance their skills.
- Committed to learning - completed over 12 certifications/courses and keeping up to date with the latest AI/ML advancements and technology.

Strategic Marketing / Junior Business Analyst   Aug 2021 - Jan 2022
Hilti   *AKL, NZ*

- Pioneered a customer prioritisation project through an optimisation program, identifying key long-term clients, resulting in a 12% increase in customer retention and 8% uplift in sales to prioritised accounts.
- Conducted over 15 workshops and training sessions, effectively integrating new data management standards across 5 departments, enhancing data integrity and operational efficiency by 14%.

Research Assistant   Nov 2021 - Apr 2022, Nov 2020 - Apr 2021
University of Auckland   *AKL, NZ*

- Led two research projects: one in mathematical modelling (under engineering science), and one in innovation & entrepreneurship (under commerce).
- Mathematical modeling project: supported the development of ENGSCI 314 (Mathematical Modelling 3) where the following topics are covered: Probability, Data Analysis, Ordinary Differential Equations, and Partial Differential Equations.
- Innovation & Entrepreneurship project: completed a comprehensive research project focused on exploring the entrepreneurial ecosystem in Taiwan through a case study investigating Gogoro.

PROJECTS

Human Activity Recognition *IoT, Machine Learning, Algorithms, Signal processing/time-series, Python.* Developed a Random Forrest Classifier for recognising when a person is either swimming or playing football based solely on the iPhone accelerometer. Further analysed and evaluated the performance of the model on backstroke vs. freestyle swimming techniques. Both classification models yielded an accuracy of ≈95%.

Stock Price Prediction (Contractor). End-to-end lead. Developed a machine learning model to predict the next day's stock prices (time-series) to provide investment recommendations, using Python, TensorFlow, scikit-learn, Linear Regression, Random Forest, RNN, LSTM neural networks, and streamlit.

MLOps and Operational Controls (Deloitte) *Large Banking Client - Lead Data Scientist & Machine Learning Engineer.* The engagement objectives were to implement ML operational controls and Responsible AI guidelines across the company.
Marah implemented the controls within an exemplary model (classifying credit risk) using SageMaker clarify, Deepchecks, XGBoost, PyCaret, CloudWatch, AWS Model Monitor, and Optuna while ensuring adherence to the client's risk taxonomy and requirements.
All processes were documented in Confluence and tickets were tracked in Jira. Delivered using MLOps principles with model training, algorithm optimising, hyperparameter tuning, and deployment being orchestrated on the AWS Sagemaker platform.

Analysing Footpath Roughness (WSP). *Python, mathematical modelling, geospatial, IMU-GPS, signal processing, time-series.* Led a critical analysis of footpath profiles, identifying and mitigating 100+ trip hazards, enhancing safety and comfort for users, thereby reducing public liability claims by 32%.

PROFESSIONAL DEVELOPMENT

AWS Certifications & Training	Certified Machine Learning - Specialty, Solutions Architect - Associate, Cloud Practitioner, Generative AI Essentials (Business), Bedrock Training
AI and Data	2x Dataiku, 2x Alteryx certifications, 4x DeepLearning.ai, 4x NVIDIA AI courses