

# Madeleine Nouri

[M.Nouri@unsw.edu.au](mailto:M.Nouri@unsw.edu.au)

0490 139 158

## Technical Skills

Programming Languages: Python, Scala, R, SQL, C, PySpark, Spark

Machine Learning Frameworks: TensorFlow, PyTorch

Cloud Platforms: Azure Databricks, Google Cloud Platform

Git (version control)

Restful API

Agile Methodologies

Natural Language Processing

Computer Vision

Deep Learning

Artificial Intelligence

Test-Driven Development

Data Science and Engineering

Scalable AI/ML Solutions Coding Standards

Cross-functional Teams Collaboration

Data Analysis and Processing

Problem Solving

Generative AI and LLM

## Professional Development

**PhD Student, UNSW**

**2025 - current**

**Master of Information Technology, UNSW 2020 -**

**2023 Majored in Artificial Intelligence, Data Science & Engineering with Distinction**

- Key Courses: Algorithms and Programming, Computer Vision, Data Structures & Algorithms, Database Systems, Data Services Engineering, Computer Network & Applications, Neural Networks & Deep Learning, Artificial Intelligence, Big Data Management, Advanced Machine Learning

## Professional Experience

**Data Scientist/Machine Learning Engineer, Optus**

**Feb 2024 – Current Key projects:**

- Developed Large Language Model framework using LLama3.2 3B model, quantised it and engineered a prompt to derive analytics insights from text
- Developed Churn Propensity Model
- Developed Customer Segmentation Model

*Responsibilities:*

- Implemented feature engineering from time-series data using distributed computing frameworks such as PySpark and Scala.
- Reported on project progress and milestones during agile meetings.
- Assisted machine learning engineers in testing feature quality during the productionisation phase.
- Prepared model XML files for deployment by machine learning engineers.

- Committed code changes to the GitHub repository for future use by senior data scientists in the squad.
- Translated Python proof of concept (POC) code into Scala and conducted thorough engineering unit testing.
- Addressed queries from the data engineering team during the productionisation process.
- Applied various machine learning algorithms to enhance model performance.
- Utilised the Databricks cloud platform for feature engineering and pipeline development.

**Technology Graduate, Qantas Aug 2023 – Feb 2024 Responsibilities:**

- Developed a data science model to predict the propensity of customer churn.
- Analysed large amounts of customer data to extract actionable insights and trends.
- Communicated findings with business stakeholders by building dashboards and visualisation.

**Casual Academic, UNSW Sep 2022 – Aug 2023 Responsibilities:**

- Served as course administrator, tutor, and marker for courses in Artificial Intelligence, Advanced Machine Learning, and Algorithms.
- Enhanced coding skills by providing hands-on guidance to students during computer labs, focusing on PyTorch and TensorFlow.
- Facilitated student learning by explaining complex concepts and troubleshooting coding issues.
- Contributed to course development by creating and updating instructional materials.
- Evaluated student performance through assignments and exams, providing constructive feedback to support their academic growth.

**Researcher, UNSW Sep 2022 – May 2023 Research Topic: Human Pose Estimation and Activity Recognition Using Deep Learning Models Responsibilities:**

- Conducted review of the latest research focusing on human pose estimation and activity recognition.
- Analysed various methodologies and technologies used in the field, including advancements in deep learning models.
- Developed multiple code pipelines to classify human activities from custom video datasets.
- Leveraged data integration techniques to ensure seamless data flow between different systems.
- Applied data processing practices to transform and prepare the data efficiently, ensuring reliable integration throughout the pipeline.
- Utilised pre-trained Graph Neural Networks (GNNs) and Transformer models from existing literature.
- Implemented these models using PyTorch, ensuring efficient and accurate activity classification.
- Worked with complex codes, learning and adapting them from GitHub repositories.
- Optimised code to run on GPUs, enhancing computational efficiency and performance.
- Documented research findings and methodologies in LaTeX, adhering to academic standards.
- Presented research outcomes to stakeholders, effectively communicating complex technical concepts and results.

**Student, UNSW Jun 2020 – Sep 2022**

Demonstrated understanding of Git version control, natural language processing and data engineering principles during below selected assignments:

- Image processing and segmentation for self-driving vehicles using deep learning (Pytorch).
- Twitter Data Sentiment Analysis using Deep Learning Natural Language Processing techniques (Pytorch).
- Sydney bus trip scheduling with the earliest arrival (C).
- Multithreaded network design with UDP and TCP sockets to mimic a forum with multiple client connections (Python).
- Built a restful API using Flask restx and SQLite, tested with Swagger (Data Engineering in Python).
- ABC News headline word co-occurrence count and finding most similar headlines (Scala/Hadoop MapReduce/Spark).

**Assistant Project Manager, TSA Riley Oct 2018 – Jun 2020 Responsibilities:**

- Fostered collaboration and teamwork across diverse project teams to ensure successful project delivery.
- Demonstrated exceptional organisational skills by managing project timelines, resources, and documentation.
- Utilised strong communication skills to effectively convey project updates and requirements to stakeholders.
- Managed stakeholder relationships, ensuring their needs and expectations were met throughout the project lifecycle.