JONATHAN MOREL

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Actively Seeking Graduate Data Scientist | AI/ML Engineer | Applied Research Assistant

Career Objective

Computer Science student specialising in Data Analytics and AI, with hands-on experience in machine learning and computer vision for medical imaging, anomaly detection and infrastructure risk modelling. Eager to leverage technical expertise in deep learning, MLOps, and research skills to contribute to innovative projects in the AI and data science field.

Education

Bachelor of Computing Science (Honours) Majoring in Data Analytics and AI **January 2022 - November 2025**
University of Technology Sydney

Skills

Programming Languages: Python, Java, C++, SQL
Feature Engineering: Pandas, Numpy, Scikit-Learn, Excel, Knime
DL & NN Architectures: CNN, RNN, LSTM, ViT, Gan, Transformers, Autoencoders and Decoders
Neural Network Models: U-Net, VGG, ResNet, Inception, EfficientNet, YOLO, Faster R-CNN, Mask R-CNN
Analysis Techniques: Anomaly Detection, EDA, Image Segmentation, Object Detection, Comparative Analysis
ML Frameworks & Libraries: TensorFlow, Keras, Pytorch, Scikit-Learn, XGBoost and General Concepts
Modelling Techniques: 3D Modelling and Reconstruction, Transfer Learning, Fine-Tuning, Data Augmentation
CV Tools & Techniques: OpenCV, YOLO, Image Classification, Semantic and Instance Segmentation
Data Visualisation: Tableau, Excel, Plotly, Matplotlib, Seaborn, Google Charts
Research: LaTeX, Overleaf, Literature Review, EndNote, Google Forms, Git & Github, Google Colab, OneDrive
Professional: Workshop Facilitation, Project Management, Research & Report Writing, Technical Documentation

Work Experience

UTS Researcher – TRU Project under Project SMaRTER **February 2025 – Present**
Sydney, NSW

- Led the full data pipeline for a national telecommunications infrastructure risk project, cleaning and consolidating over 100,000 rows of industry maintenance records, corrosion reports, and structural datasets.
- Designed and implemented the foundation of a “Tower Health Index” through exploratory analysis, component mapping, and integration of industry data with trialed academic methodologies.
- Engineered a severity tagging framework using NLP techniques including lemmatisation, keyword extraction, and LLM-assisted analysis to classify and cluster issue types across diverse data sources.
- Conducted extensive component-based correlation analysis, identifying structural-risk relationships between tower design, corrosion patterns, work types, and historical risk ratings.
- Created scalable datasets, tagging pipelines, and visual analytics (bar/pie charts, heatmaps, KML exports), enabling stakeholder understanding across maintenance planning and lifecycle prioritisation.
- Collaborated with UTS researchers and Amplitel engineers to align outputs with operational needs, balancing domain knowledge, academic literature, and technical innovation.

Computer Science Tutor **June 2022 - Present**
University of Technology Sydney, NSW

- Delivered personalised tutoring across programming, research, and theoretical computing, achieving Distinction/HD results.
- Guided students through machine learning and AI projects, with 93% achieving scores between 90 and 100 on assessments.
- Conducted workshops on programming fundamentals and data science concepts collaborating with UTS clubs and the Internal UTS Body, engaging over 120 students per semester.
- Provided comprehensive support in debugging, troubleshooting, and assessment preparation, reducing error rates by 40%
- Mentored start-ups, students and professional research groups earning a 95% satisfaction rating.

UTS Lead Ambassador **February 2023 - Present**
University of Technology Sydney, NSW

- Performed extensive data analysis for the CSJI department on the UniPrep program, increasing student engagement by 80% based on feedback and attendance.
- Organised UniPrep workshops on design, transdisciplinary skills, and STEM, engaging over 500 students yearly and improving university preparedness by 70%, as shown in post-program surveys.
- Delivered sessions on Web Development, AI fundamentals, and cross-STEM collaboration, with 85% of participants reporting greater technical proficiency and collaborative abilities, based on feedback and assessment scores.

Event Staff **May 2022 - Present**

Event Force, Redfern, NSW

- Coordinated logistics for high-attendance events (15,000 to 30,000 attendees), managing setup, operations, and teardown to ensure seamless event flow and compliance with safety standards.
- Directed staff scheduling across multi-shift operations, coordinating over 100 staff members to ensure optimal workforce distribution, reducing downtime during peak demand.

Contract Software Developer **August 2024 – March 2025**

Sydney, NSW

- Developed and maintained web and back-end solutions for multiple start-ups Integrating a series of AI solutions.
- Completed a 6-month engagement with Jjam, delivering production-grade web features and led the prompt engineering for a core functionality of Jjam's product, directly influencing overall product development.

AI Workshop Facilitator – Industry & Academia **June 2023 – Present**

- Delivered AI workshops to students, start-ups, and enterprises, including a confidential Asian hedge fund.
- Focused on business integration of ChatGPT and Copilot, workflow automation, and cost-benefit analysis.
- Covered data privacy and prompt engineering strategies to prevent AI-related information leaks.

Projects

UTS Research - ZSL & Super-Resolution for Retinal Imaging (DR Detection) **November 2024 - Present**

- Combined GAN-based super-resolution and zero-shot learning for retinal disease detection.
- Achieved improvements on EyePACS and APTOS datasets through contrastive learning.

UTS Research - Social Network Bot Detection via Graph Learning **January 2025 - Present**

- Designed a bot detection model using social network features and GNNs.
- Applied centrality measures and adversarial testing on Twitter/Reddit datasets.

Lead Researcher - Kidney Vascular Mapping (UTS AI Showcase Industry Choice Award Winner) **August 2024 – December 2024**

- Designed a 2.5D U-Net (SE-ResNeXt50) model for high-resolution Hip-CT segmentation, achieving a Dice score of 0.81.
- Presented at the UTS AI Showcase and awarded the Industry Choice Award for applied medical imaging excellence.
- Demonstrated clinical relevance via 3D vascular reconstruction for surgical planning and diagnostic support.

Lead Researcher – Disaster Assist Drone (UTS AI Showcase Entry) **August 2024 – December 2024**

- Built a drone-enabled U-Net segmentation and blockage detection system for post-disaster environments.
- Integrated GUI, visual feedback pipeline, and RescueNet dataset; selected for demonstration at the UTS AI Showcase.
- Led dataset reannotation and model development, enabling real-time visual analysis for emergency responders.

UTS Research – AI Model Integration to NLP & Data Analysis Tasks **August 2023 - Present**

- Implemented a series of AI models to a series of applications for conducting model pipeline improvements, model distillation, automated image and data tagging and contextual analysis.
- Produced data-driven insights on trade trends, enhancing industry decision-making processes and attaining a 40% efficiency boost to system performance on NLP and data analysis tasks.
- Reduced model error rate by 95%, removing misclassification and inaccuracies dataset wide through Llama implementation

Machine Learning Analyst – Medical Heart Analysis **July 2024 – December 2024**

- Applied and benchmarked 8 ML models to classify cardiac disease risk using clinical features and ECG metrics.
- Performed end-to-end pipeline development, from preprocessing and EDA to ROC-AUC comparison.
- Identified optimal models and presented results with interpretable metrics to support medical diagnostics.

Data Analyst – Australian Shipping Import and Export Trends **March 2024 – July 2024**

- Conducted an analysis of Australian import and export data, using Excel and Tableau to identify trends across various industries, identifying a wide series of correlations increasing reporting accuracy by 40%.
- Produced data-driven insights on trade trends, enhancing industry decision-making processes and attaining a 50% increase in reporting efficiency for Australian import/export analysis.

Machine Learning Analysis – Mathematical Handwriting Identifier **March 2023 – April 2024**

- Built a series of symbol classifiers ranging from 88% - 97% accuracy for handwritten mathematical expressions.
- Reduced manual transcription effort via automated processing allowing the auto-analysis of hundreds of documents.
- Model implemented in a series of anti-cheat systems to correlate the writing behaviour of students in correlation to AI produced results e.g. Identifying cases where students have cheated and paving way for a auto-mark system.