Fergal Riordan

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Profile

ML Engineer with **1.1 MEng and BEng degrees in Electronic & Computer Engineering** from Trinity College Dublin. Professional background includes **1 year of deploying production-grade AI systems** and ∼2 years of freelance experience in RLHF-based model alignment. Strong foundation in signal processing and optimisation, with a focus on inference efficiency, evaluation frameworks, and model lifecycle management.

Technical Skills

Languages:	Python, C++, SQL, C
ML Frameworks:	PyTorch, Hugging Face, Scikit-learn, TorchVision, OpenCV
Data & Ops:	Pandas, NumPy, Docker, Git, Azure
Foundations:	Linear Algebra, Probability & Statistics, Optimisation, Signal Processing
Competencies:	Deep Learning Research, Computer Vision, Generative Modeling, Agentic Systems

Experience

AI Engineer May 2025 – Present
Channelscaler *Galway, Ireland*
Python, Microsoft Azure, Cosmos DB, Agentic AI | Overview of Channelscaler AI Features
- Co-engineered the platform's first AI agent application, designing extensible, low-latency orchestration logic for autonomous tool-calling, SQL querying, and RAG.
- Owned iterative fine-tuning and accuracy benchmarking of document extraction models for invoice auditing.

AI Data Annotation Specialist Sep. 2023 – May 2025
Data Annotation Tech *Remote, Ireland*
Python, RLHF, Prompt Engineering, Model Evaluation
- Contributed as a freelancer to a domain-expert team for RLHF-based training of IDE-integrated coding assistants.

Technical Research & Projects

Master's Thesis: Enhancing CycleGAN for Image Translation | View Project Sep. 2023 – May 2024
Python, PyTorch, GANs, Computer Vision, Loss Function Optimisation, Transfer Learning
- Proposed a custom architecture with shared generators and a novel timestamp conditioning strategy.
- Achieved an improvement of 20% on the Kernel Inception Distance metric over the baseline CycleGAN model.

Time-Series Analysis: Urban Mobility Forecasting Oct. 2023 – Dec. 2023
Python, Scikit-learn, Lasso Regression, Statistical Analysis
- Forecasted DublinBikes demand using Lasso Regression for feature selection and temporal data analysis.
- Evaluated model robustness and classifier performance through k-fold cross-validation and ROC analysis.

Classical Computer Vision: Draughts Game State Analysis | View Project Sep. 2022 – Nov. 2022
C++, OpenCV, Computer Vision
- Built a detection engine using Gaussian Mixture Models (GMM) for motion detection and board-state validation.
- Implemented histogram back-projection and probability thresholding for pixel classification and piece segmentation.

Education

Trinity College Dublin Dublin, Ireland
Master of Engineering & Bachelor of Engineering in Electronic & Computer Engineering *Sep. 2019 – May 2024*
- MEng: First-Class Honours (1.1), 80%
- BEng: First-Class Honours (1.1), 72%
- Erasmus semester at the University of Iceland, Reykjavik

Christian Brothers College Cork, Ireland
Leaving Certificate *Sep. 2013 – Jun. 2019*
- Ranked in top 70 students nationally - 625/625 points (7 H1 grades)