

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, Azure OpenAI API, Azure Document Intelligence, Cosmos DB

- Engineered the core backend and orchestration of [Scailyn](#), the platform's first AI agent; designed a scalable tool-usage framework and RAG-based architecture now being adopted as the standard across development teams.
- Enhanced an OCR-based invoice auditing pipeline, fine-tuning key-value extraction models.

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)