

# ANTHONY FAUSTINE

## Data Science Leader | Strategic AI Architect & Applied Research Innovator

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## PROFESSIONAL SUMMARY

Highly accomplished leader in **Artificial Intelligence** and **Machine Learning** with over eight years of experience delivering **scalable AI/ML solutions** and **data analytics** for business problem. Expert in architecting and governing production-ready **MLOps pipelines**, leveraging **Agile methodologies**, and leading **cross-functional teams**. Proven success in **strategic roadmap development**, aligning **AI strategies** with organizational objectives to drive innovation, and sustaining **competitive advantage**. Strong experience in executive communication and presenting at international conferences (IEEE, CIRED)..

## CORE COMPETENCIES

- Proficient in **end-to-end AI/ML pipelines**, including model design, deployment, and **governance** (versioning, **drift detection**, compliance), using **Python** (pandas, numpy, scikit-learn, xgboost, lgbm and catboost), **PyTorch**, **TensorFlow**.
- Skilled in **MLOps Best Practices** with **Docker**, **MLflow**, **CI/CD pipelines** (GitHub Actions), and **Cloud Platforms** (AWS, Data-bricks), ensuring **production-grade scalability**.
- Leadership in **AI-driven innovation**, **digital transformation**, and **strategic decision-making**.
- Expert in **Time Series Forecasting**, **Anomaly Detection**, **Predictive Maintenance**, and **Non-Intrusive Load Monitoring (NILM)**.
- Strong stakeholder communication, delivering executive briefings and international conference presentations (IEEE, CIRED).
- Skilled in **Agile methodologies** and Kanban, leading sprints to deliver high-impact AI projects on time.
- Architected **machine learning observability platforms** featuring **real-time drift detection** (Evidently) and performance monitoring (WandB).
- Proven experience in **strategic roadmap development**, innovation management, and cross-functional team leadership.

## EXPERIENCE

### Lead Data Scientist

#### Eaton

📅 Sept 2022 – Present

📍 Dublin, Ireland

- **Architected** a scalable **load forecasting pipeline** for autonomous grid systems by integrating **Time Series Models** and **Deep Neural Networks** (LSTM, NHITS), successfully **reducing prediction errors by 25%**.
- **Automated MLOps workflows** using **Docker**, **GitHub Actions CI/CD**, and **Airflow-driven retraining** with **Optuna**, which cut feature rollout timelines by 30%.
- **Spearheaded** the end-to-end development of an **AI-driven substation analytics platform**, implementing **Anomaly Detection** (Isolation Forest, Mahalanobis distance) to prioritize maintenance, resulting in a successful transition to a scalable SaaS product.
- **Architected** a robust **machine learning observability platform** featuring **real-time drift detection** (Evidently), performance monitoring (WandB), and automated retraining triggers (Airflow).
- **Delivered** AI technical briefings and solution demos to **executives** and non-technical stakeholders, and **represented Eaton** at 3 international conferences (Italy, France and Norway).
- **Awarded 2024 Eaton-STAR Leadership in Data Science Award** for 25% improvement in forecasting accuracy and excellence in innovation.

### Senior Industrial Analytics Researcher

#### Irish Manufacturing Research

📅 Apr 2021 – Aug 2022

📍 Dublin, Ireland

- **Directed** the Data-Driven Maintenance Service (DDMS) project using **Agile methodologies**, implementing **IoT-driven predictive maintenance** which **reduced unplanned downtime by 30%** and **increased Overall Equipment Effectiveness (OEE) by 25%**.
- **Engineered** a predictive maintenance platform for CNC machines leveraging **unsupervised machine learning** and **Hidden Markov Models (HMMs)** to monitor spindle health.
- **Developed and deployed AI-driven computer vision inspection systems** for Industry 4.0, using **Deep Learning** for anomaly detection, which **reduced defect detection time by 40%** and **improved operational efficiency by 20%**.
- **Established MLOps best practices** with model versioning and automated monitoring, **accelerating development efficiency by 25%** and enabling scalable, production-grade analytics deployments.

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## Data Scientist & ML Researcher

### CeADAR

📅 Feb 2020 – Mar 2021

📍 Dublin, Ireland

- Developed a scalable **load-profiling system** using **deep neural variational autoencoders** and **K-means clustering** to segment 10000+ building load profiles.
  - Implemented cluster-specific demand forecasting with **Bayesian state space models (SSMs)**, improving prediction accuracy by 22% and reducing peak-load planning errors by 18%.
  - Led the development of an **automated satellite imagery labeling pipeline** integrating geospatial data with Sentinel-2 imagery to train object detection models (**UNET**).
  - Deployed a scalable workflow (Python, GDAL, Docker) to generate 1K+ labeled training samples with **95% annotation accuracy**, reducing manual labeling efforts by 70%.
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## Machine Learning Researcher

### IDLab, imec, Ghent University

📅 Oct 2017 – Oct 2019

📍 Ghent, Belgium

- Developed a novel **computer vision framework** for Non-Intrusive Load Monitoring (**NILM**) using V-I trajectory and **CNNs**, improving detection accuracy by 35%.
  - Designed and deployed a machine learning pipeline for smart-home event detection, leveraging multimodal sensor data to achieve **92% detection accuracy**.
  - Secured project funding by **collaborating** with industrial partners on grant proposals, attracting over 500K in research capital to advance NILM and smart-home AI development.
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## EDUCATION

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## PhD in Computer Science & Engineering

### Tecnico Lisboa

📅 2021–2025

📍 Portugal

- Researched and Developed probabilistic forecasting models and AI-driven energy analytics to optimize power grid efficiency and support energy transition.
  - Mentored and supervised 3+ MSc students, guiding thesis development and research execution, demonstrating early-career team leadership and development skills.
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## MSc in Leadership, Technology & Innovation

### Technological University Dublin

📅 2022–2023

📍 Ireland

- Created the AI Business Innovation and Strategic AI Roadmapping Frameworks, enabling organizations to integrate AI and maximize ROI (First-Class Honours).
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## M.S. in Telecommunications Engineering

### The University of Dodoma

📅 2010–2012

📍 Tanzania

- Built **wireless sensor systems** to monitor water quality at Lake Victoria, laying groundwork for data-driven solutions.
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