LUIS TORAL, AI Engineer

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PROFILE

AI Engineer with expertise in **Generative AI**, **LLMs**, and **data-centric** solutions. Skilled in developing production-ready microservices and microSaaS platforms using **Python**, **SQL**, **PyTorch**, **Hugging Face**, and **Docker**. Experienced in creating **RAG (Retrieval-Augmented Generation)** pipelines, agentic chatbots, and client-facing AI solutions across industrial, regulatory and enterprise domains. Focused on delivering measurable business impact through ethical AI implementation.

EMPLOYMENT HISTORY

Oct 2024 — Present

AI Solution Engineer, Ventex Studio — Remote

- **Well Decommissioning Data Solutions:** Developed comprehensive solutions for oil & gas decommissioning, including: (1) A semantic matching system using **Hugging Face Transformers** (**BERT**, **RoBERTa**) to align well abandonment datasets with industry standards, utilizing vector embeddings with **cosine similarity** scoring, **Pandas** for data processing, and **Plotly** for visualisation; (2) A **Retrieval-Augmented Generation** pipeline using the **RagFlow framework** to process decommissioning documentation, integrating open-source **LLMs** (**Llama**, **Qwen**, **DeepSeek**) with custom re-ranking for optimised knowledge retrieval, all deployed via **Docker** containers for enterprise use.
- **Architectural Regulations Assistant:** Created an AI assistant for a London-based architecture and design practice, using **Cache-Augmented Generation** to process building regulations. Tested vector databases including **FAISS** and **ChromaDB**, and deployed on **Azure**, reducing regulatory information access time by 85%.
- **Technical Documentation Platform:** Built a Manual Assistant - AI chatbot for inspection engineers, building with vector store **OpenAI API** and **Gradio** as a front-end for data processing, reducing document search time by 80%.

Dec 2023 — Oct 2024

Data Solutions Consultant (Self-employed) — Aberdeen (Hybrid)

- **Industrial Data Platform (TRAC):** Designed a micro-SaaS based system for a global inspection firm using **Python**, **Pandas**, and **NumPy** to process millions of ultrasonic thickness readings. Created data visualisation with **datashader-rasterization**-based techniques reducing engineering final report generation time from 5 days to 1 day.
- **Video Inspection Hub (HPR):** Developed a cloud-native system for subsea inspection videos using **Docker** and **SQL** databases. Implemented **Generative AI** with **LLMs** to automatically generate inspection summaries and extract insights, establishing a foundation for advanced AI-based defect detection. Deployed using **Azure Data Lake** and **Azure App Services**, creating a scalable solution that significantly reduced manual video review time.

Jul 2021 — Dec 2023

Data Scientist, Innovate UK KTP — Aberdeen

- **Enterprise AI for Remote Visual Inspection:** Led a £250k project automating remote visual inspection for offshore assets using **PyTorch** to train deep learning models. Created binary and multi-label classification systems to detect anomalies in inspection video footage and still images (pitting, material loss, cracks, through-wall defects) achieving a detection accuracy above 94%. This project positioned the company ahead of competitors through AI implementation and human-in-the-loop validation, reducing inspection costs by approximately 40%.

2020 — 2021

Machine Learning Research, Robert Gordon University — Aberdeen

- **Technical Document Intelligence:** Created an intelligent document processing solution for engineering diagrams using **Python**, **OpenCV**, and advanced computer vision techniques. Leveraging the **YOLO** object detection framework to identify and classify complex technical symbols and components in Piping & Instrumentation Diagrams. Developed a semantic extraction layer that enabled engineers to query diagrams using natural language, significantly improving accessibility of technical information. This research culminated in an academic paper presented at a top-tier AI conference (ICDAR) in Switzerland.

EDUCATION

Jan 2023 — Dec 2024 **MRes Data Science, Robert Gordon University** **Aberdeen**
Research-focused Master's in automated remote visual inspection and large-scale data processing for offshore environments.

Jul 2020 — Dec 2020 **MSc Oil & Gas Finance and Accounting, RGU** **Aberdeen**
Studied market forecasting with SQL databases, strengthening analytical and financial modelling capabilities.

Jul 2020 — Dec 2020 **TensorFlow Developer, DeepLearning.AI** **Online**
Focused on ML pipelines using TensorFlow, from data ingestion to complex regression and classification tasks.

Aug 2012 — May 2018 **BSc Mechanical Engineering, Institute of Technology of Monterrey** **Mexico**
Graduated with Honours under academic scholarship; led first-place industrial application project.

SKILLS

Python	Advanced	**SQL**	Proficient
PyTorch	Proficient	**Hugging Face**	Proficient
LLMs/VLMs	Proficient	**Docker**	Proficient
Azure	Intermediate	**Microservices**	Advanced
RAG Pipelines	Proficient	**NumPy/Pandas**	Advanced

ACADEMIC PUBLICATIONS

Nov 2025 **British Machine Vision Conference** **UK**
Contextualized Video Summaries for Underwater Inspection: A Deep Vision-Language Approach. (In development)

Jun 2023 **Engineering Applications of Neural Networks** **Spain**
Digital Transformation for Offshore Assets: A Deep Learning Framework for Weld Classification in Remote Visual Inspections.

Aug 2022 **6th International NDT Conference and Exhibition** **Malaysia**
Towards Automated Remote Inspection of Offshore Assets: Classification of Circumferential Welds Using Deep Transfer Learning-based Methods.

Sep 2021 **International Conference on Document Analysis and Recognition** **Switzerland**
A Deep Learning Digitisation Framework to Mark Corrosion Circuits in Piping and Instrumentation Diagrams.

LANGUAGES

English Fluent **Spanish** Native

REFERENCES

References available upon request.