

ALWIN HILTON A

AI ML Engineer

CONTACT

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SUMMARY

Enthusiastic Data Science student with a robust foundation in data analysis, data visualization, and machine learning. Proficient in Python, SQL, and data visualization tools, with hands-on experience in processing and analyzing complex datasets to derive actionable insights. Skilled in machine learning algorithms and object detection techniques. Strong problem-solving skills, attention to detail, and the ability to communicate complex data findings effectively to both technical and non-technical audiences. Eager to apply a deep understanding of ML principles and a passion for cutting-edge technology to solve challenging engineering problems

EDUCATION

- Master of Data Science** 2024 - 2026
St. Joseph's College | Tiruchirappalli
- Bachelor of Computer Science** 2021 - 2024
St. Joseph's College | Tiruchirappalli

CERTIFICATIONS

- Supervised Machine Learning: Regression and Classification (Coursera)
- Advanced Learning Algorithms (Coursera)
- Unsupervised Learning, Reinforcement Learning (Coursera)
- Python Programming (Udemy)
- Data Visualization using Power BI (Great Learning)
- Data Analysis using Microsoft Excel (Coursera)

ACHIEVEMENTS

- Participated in inter-college hackathons and technical events
- Secured top positions in coding and innovation challenges demonstrating strong problem-solving skills.
- Presented research and project prototypes at tech fests recognized for creativity and practical implementation.

SKILLS

- **Programming Languages:** Python, SQL
- **ML & DL Frameworks:** Scikit-learn, TensorFlow, PyTorch, Keras, Computer Vision, Yolo, NLP, Qwen-VL, CrewAI, RAG, MCP, langchain
- **Data Analysis & Preprocessing:** Pandas, NumPy, Data Cleaning, Data Preprocessing, Feature engineering
- **Web Frameworks:** FastAPI
- **Data Visualization:** Matplotlib, Seaborn, Plotly, Power BI

WORK EXPERIENCE

ML Intern | National Institute of Technology, Tiruchirappalli

- Developed and optimized YOLOv8-based object detection models to address real-world cv challenges, improving detection accuracy, inference speed, and model efficiency.
- Created a 3,000+ labeled custom dataset and collaborated with researchers at NIT on model training, hyperparameter tuning, and performance analysis using Python, OpenCV, and DL frameworks.

AI Intern | Techmango , Madurai

- Developed a multimodal vision-language application using Qwen 2.5-VL for context-aware object detection, visual grounding, and detailed image description generation.
- Implemented dynamic natural language-based filtering with prompt engineering, preprocessing, and structured output parsing to return accurate, user-specific object detections and descriptions.

PROJECTS

Autonomous Multi-Agent Meeting Intelligence System using CrewAI

- Built an autonomous multi-agent system using CrewAI to generate research-driven meeting briefs.
- Implemented specialized agents leveraging REACT reasoning and asynchronous workflows for efficient collaboration.
- Automated professional knowledge-work, including participant research and strategic insight generation.

Real-Time Hazard Detection using Qwen-VL Model

- Built an AI system using Qwen-VL to detect risks in images and real-time video feeds.
- Automatically analyzed hazards and potential problems.
- Generated actionable solutions to prevent accidents

Football Analysis using yolo

- Built an AI football analysis system using YOLO and OpenCV to track players, referees, and the ball.
- Assigned teams with jersey colour clustering and corrected for camera motion.
- Measured player speed, distance, and team ball possession for match analytics

Hand Gesture Controlled Gaming System

- Engineered a real-time computer vision system using OpenCV and MediaPipe to control games via gestures.
- Converted hand landmarks into keyboard events at 20 FPS to enable a touch-free user experience.