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**Haris Bin Ismail**

Machine Learning Engineer | AI/ML-Developer

**PROFESSIONAL SUMMARY**

Machine Learning Engineer with 2+ years of experience in building and deploying production-ready software systems powered by artificial intelligence, deep learning, and automation. Demonstrated ability to design scalable ML pipelines, write maintainable Python code, and integrate backend APIs into real-time applications. Passionate about solving safety-critical and operational efficiency problems using AI.

Proficient in deep learning frameworks, cloud-native architecture, real-time video analytics, and computer vision models. Experienced in delivering end-to-end machine learning solutions across safety systems, data compression pipelines, and recruitment platforms.

**Keywords:** Python, Machine Learning, Deep Learning, Computer Vision, NLP, Model Deployment, APIs, Time-Series, Cloud, SQL, Safety Systems, Telemetry, Data Pipelines, Full-Stack Development, R&D, Real-Time Inference, MLOps

**EDUCATION**

**BS – Artificial Intelligence GIKI *2026***

**EXPERIENCE**

**Machine Learning Engineer (Intern) | C&AE, NASTP** *June 2025 – Aug 2025*

* Led the end-to-end design and development of **HRMS**, a full-stack AI-powered Human Resource Management System for NASTP.
* Developed and integrated **AI components** including resume parsing, candidate scoring, red flag detection, and a RAG-enabled **Stream-lit chatbot** for HR query resolution and job matching. Designed and built a **responsive, modern web application** using React 18, Tailwind CSS, and TypeScript with optimized routing, UI state, and **real-time KPI-analytics dashboards**.
* Designed and implemented multiple **autoencoder** architectures to test compression on synthetic and benchmark datasets.
* Trained domain-specific autoencoders and evaluated them using **MSE, MAE, and PSNR** to assess reconstruction accuracy at various compression levels. Analysed cutting-edge research (e.g., Meta AI’s Audio-MAE, Txt2Vid) and public repositories to benchmark design patterns and performance expectations.
* **Achieved compression rates of up to 50%** while maintaining acceptable reconstruction quality (Test MSE ≈ 0.02), confirming model viability for specific structured data types.

**SKILLS**



**Languages:** *Python, JavaScript, TypeScript, C++, C#, Bash  
Frameworks/Libraries: PyTorch, TensorFlow, Scikit-learn, OpenCV, Hugging Face, Flask, FastAPI, YOLOv5, LSTM*

**Web Development:** *React.js, Node.js, Express.js, Tailwind CSS*

**Databases:** *PostgreSQL, SQLite, MongoDB, Redis, Supabase*

**DevOps/Tools:** *Docker, Git, GitHub Actions, Postman, AWS EC2/S3, Streamlit*

**Machine Learning:** *Model Development, EDA, Preprocessing, Hyperparameter Tuning, Evaluation (MSE, PSNR, MAE), Time-Series Modeling*

**Soft Skills:** *Cross-functional collaboration, Agile/Scrum, Sprint Planning, Documentation, Code Review, Technical Research*

**PROJECTS**



* **Smart Attendance System**

***Tech Stack:*** ***Python, YOLO, DeepFace, Flask, React, SQLite***

Computer Vision based system that automates attendance marking from group photos using facial recognition. Integrated YOLO for real-time face detection and DeepFace for accurate identity matching. Designed a full-stack architecture with React (frontend), Flask (backend), and SQLite for storage. The system significantly reduces manual effort and improves accuracy in classroom attendance tracking.

* **AI-Powered Recruitment Platform – NASTP HRMS**

***Tech Stack: TypeScript, React, Express.js, PostgreSQL, Drizzle ORM, Groq , Redis, Streamlit, Supabase***

Full-stack Human Resource Management System designed to streamline recruitment, assessments, and candidate evaluation. Built a modern, responsive web application with role-based access for admins and candidates. Integrated AI-powered resume scoring using Groq API and developed a Streamlit-based RAG chatbot for job matching and HR query resolution. Features include semantic candidate search, red flag detection, automated scoring, assessment delivery, and real-time analytics on a PostgreSQL + Redis backend with Neon serverless architecture.

* **Autonomous-Driving Collision Detection System using YOLOv5 and LSTM**

***Tech Stack: Python, PyTorch, YOLOv5, LSTM, OpenCV, Flutter, Feature Extraction***

Deep Learning based accident prevention system that forecasts vehicle collisions in real-time from dashcam surveillance footage. Leveraged YOLOv5 for object detection and LSTM networks for modeling/learning temporal vehicle dynamics using the CADP datasets. Achieved early collision detection 2-4 seconds before impact. Flutter-based interface for real-time video upload, vehicle tracking, and accident alert.

* **Autoencoder-Based Data Compression for Communication Systems**

***Tech Stack: Python, PyTorch, Autoencoders, OpenCV, NumPy, MSE/PSNR Evaluation***

Deep learning-based feasibility study exploring the use of autoencoders for compressing telemetry, audio, and image data in communication pipelines. Implemented and evaluated custom autoencoder models on benchmark datasets (MNIST, WAV) to measure reconstruction fidelity at various compression ratios. Assessed generalization performance across domains and highlighted limitations in handling out-of-distribution inputs. Benchmarked models using MSE, MAE, and PSNR, and reviewed relevant research (e.g., Meta’s Audio-MAE, Txt2Vid) and open-source tools. Findings guided recommendations for domain-specific training using real sensor data.