Muhammad H. Abdurrahman

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Summary

Detail-oriented and innovative Computer Engineering graduate specializing in Artificial Intelligence, Machine Learning, and Full-Stack Development. Proven success in delivering AI-driven solutions for logistics, gaming, image processing, and retail automation. Hands-on experience in Python, TensorFlow, PyTorch, NestJS, PostgreSQL, and cloud deployment (NVIDIA Jetson). Strong background in Agile/Scrum, software engineering, and real-world project delivery. Seeking to contribute technical expertise and research-based innovation to dynamic engineering teams.

Technical Skills

Programming: Python, C++, JavaScript, HTML/CSS, SQL
Frameworks & Libraries: TensorFlow, PyTorch, OpenCV, YOLOv11, NestJS, Express.js, Anaconda, NumPy, scikit-learn
Databases: PostgreSQL, TimescaleDB, MySQL, PrismaORM
Tools & Platforms: Docker, GitHub, LaTex, Trello, Slack, Roboflow, Unity
Specialities: Computer Vision, Predictive Analytics, Object Detection, Agile Methodologies, Technical Documentation

Education

American University in Dubai — **Dubai, UAE**
Bachelor of Science in Computer Engineering — 2021 – 2025
- Graduated Cum Laude. GPA: 3.47/4.00
- Dean's List 2022, 2024
- Recipient of Sheikh Mohammed Bin Rashid Al Maktoum Foundation Scholarship
- Captained the Tennis Team for 2022, 2023 season.

Emirates International Private School — **Abu Dhabi, UAE**
High School Diploma — 2019 – 2021
- American Curriculum
- Graduation Grade: 97.8/100

Experience

Algo Alliance, Dubai, UAE — May – September 2024
Full Stack Developer Intern
- Developed and deployed scalable Web3 and blockchain-integrated applications using NestJS, Prisma ORM, PostgreSQL, and Docker.
- Implemented secure JWT-based authentication and authorization systems, improving security and scalability for high-traffic applications.
- Optimized front-end performance by reducing DOM manipulation inefficiencies, enhancing user experience by 20%.
- Containerized backend services with Docker Compose, streamlining deployment across development, staging, and production environment.
- Collaborated in Agile/Scrum environment with daily stand-ups/stand-downs; participated in sprint planning sessions, resolved blockers, and maintained GitHub-based version control.

Pertamina International Shipping, Dubai, UAE — December 2022
Liaison Officer
- Coordinated meetings and communications between internal teams and external stakeholders (including ENOC Dubai).
- Managed executive schedules for CEO and Board of Directors, ensuring efficient time allocation and task prioritization.

Projects

Senior Design Project: Automated Product Detection using Deep Learning (L'Oréal Collaboration), June 2025
- Developed an AI-driven retail shelf monitoring system for L'Oréal products using YOLOv11, achieving 85% mAP@0.5 with sub-200 ms latency.
- Designed hybrid edge-cloud architecture with NVIDIA Jetson Nano and AWS EC2 for scalable real-time deployment.
- Integrated TimescaleDB for event logging and REST APIs for retailer notifications.
- Implemented OpenCV preprocessing, data augmentation, and transformer-based exploration for small-object detection.

AI Game Project – GA-MAZE (Unity + Genetic Algorithms), May 2025
- Designed a dynamic maze game integrating AI opponents powered by Genetic Algorithms and A* pathfinding.
- Implemented multiplayer synchronization, destructible environments, teleportation mechanics, and resource-based combat systems for strategic gameplay.
- Conducted algorithm testing for evolving AI behaviors in real time, optimizing bot fitness and decision-making under constraints.

Machine Learning Project – Predictive Modeling for Container Logistics (DP World Collaboration), December 2024
- Built predictive models (Random Forest, Linear Regression) to forecast container volumes and classify seasonal demand.
- Applied clustering and classified container demand levels using KNN, enabling optimized port resource allocation and 93% classification accuracy.
- Performed feature engineering, preprocessing, and seasonal trend analysis on DP World's operational dataset of 5,000+ records.

DIP Project – Comparative Analysis of CNN Architectures (ResNet-50 vs EfficientNet-B0), April 2024
- Performed deep learning experiments comparing ResNet-50 and EfficientNet-B0 for object recognition.
- Evaluated accuracy, training loss, and computational efficiency for image classification using ImageNet dataset.