

MOHAMMED TARABAY

Software Engineer

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SUMMARY

Software Engineer with a solid expertise in AI, Cloud, DevOps, Robotics, Mobile App, and Embedded Systems. Experienced in multidisciplinary projects, Entrepreneurship, and AI-driven innovation, with a proven track record in leading winning tech solutions and empowering student communities.

TECHNICAL SKILLS

Main Skills: AI, IoT, Embedded Systems, Robotics, DevOps, Computer Vision, Mobile App Development

Frameworks: ROS2, Ultralytics

Libraries: PyTorch, TensorFlow, Keras, Pandas, OpenCV, NumPy, ONNX, TorchScript

Programming Languages: Python, C/C++, Embedded C/C++, Dart, Flutter, Java

Embedded & IoT Tools: Arduino, ESP32, AVR, Raspberry Pi

DevOps Tools & Skills: Docker, Kubernetes, CI/CD, Terraform, GitHub Actions, Azure DevOps, AWS, Prometheus, Grafana

Autonomous Systems Skills: Perception, Sensor Fusion, SLAM, Navigation

Version Control Systems: Git, GitHub, GitLab

Other Tools: MATLAB, Linux

EXPERIENCE

Banque Misr

Jul. 2025 – Sep. 2025

DevOps Engineering Intern

Cairo, Egypt · Onsite

- Shadowed senior DevOps engineers to understand enterprise-grade CI/CD practices, cloud infrastructure automation, and secure deployment strategies within a regulated banking environment.
- Observed the integration and scaling of containerized applications using Docker and Kubernetes in production-like setups.
- Reinforced knowledge from Sprints training by analyzing real-world implementations of GitHub Actions pipelines and Azure DevOps workflows.
- Assisted in maintaining infrastructure deployments on AWS using Terraform for reproducible and automated provisioning.
- Gained exposure to financial-sector compliance requirements and security practices in DevOps workflows.

Sprints

Jul. 2025 – Sep. 2025

DevOps Engineering Intern

Cairo, Egypt · Remote

- Completed hands-on training in DevOps practices including CI/CD pipelines, containerization, cloud infrastructure, and Infrastructure-as-Code (IaC).
- Built and deployed cloud-native applications using Docker and Kubernetes, with automated CI/CD workflows via GitHub Actions and Azure DevOps.
- Provisioned and managed AWS infrastructure using Terraform, ensuring consistency, scalability, and reproducibility.
- Collaborated on enterprise-simulated DevOps projects, troubleshooting deployments and optimizing pipelines for performance.
- Achieved **96.17% overall productivity (97.5% scope, 94.83% quality)**, reflecting efficiency and high-quality delivery.
- Maintained excellent project performance: **87.5% submission rate** for tasks/projects, **100% submission rate** for final projects, and a **96.5% overall score** in final project.

National Telecommunication Institute (NTI)

Jan. 2023 – Mar. 2023

AI & IoT Intern

Cairo, Egypt · Remote

- Gained a deep understanding of Artificial Intelligence and its real-world applications across society.
- Built both supervised and unsupervised machine learning models as part of intensive hands-on training.
- Developed neural network models and completed several AI projects demonstrating applied proficiency.
- Explored Internet of Things (IoT) technologies through practical projects using Node.js and Cisco Packet Tracer.
- Collaborated on a graduation project to build a deep neural network for facial emotion recognition.

PROJECTS

A Modular Smart Transportation System using Software-Defined Vehicles in Smart Cities [github](#)

- Led a multidisciplinary team to develop a **Software-Defined Vehicle (SDV)** integrating **AI, IoT, and embedded systems** for autonomous mobility.
- Built and optimized **ADAS modules** (object, lane, distance, and sign detection) using **YOLOv8** and **OpenCV**.
- Integrated **Kinect, IMU, GPS, and ultrasonic sensors** with **Raspberry Pi 5** for real-time perception and control.
- Implemented **V2V, V2I, and V2X communication** via **ESP32**, enabling connected and cooperative vehicle networking.
- Developed a **ride-booking mobile application** prototype to interface with transportation hubs for smart mobility management.
- Designed a scalable system architecture supporting future **EV integration, V2G, and LiDAR-based perception**.

DevOps Microservices Pipeline for Voting App [github](#)

- Led a team as **Team Leader selected by Sprints** for outstanding productivity and performance metrics.
- Developed and deployed a cloud-native microservices application (Voting App) with services built in **Python, Redis, .NET, PostgreSQL, and Node.js**.
- Implemented CI/CD pipelines with GitHub Actions for Docker build/push and automated deployment using ArgoCD.

- Provisioned AWS EKS clusters and cloud infrastructure using Terraform (**Infrastructure as Code, IaC**).
- Integrated observability stack with Prometheus and Grafana for real-time monitoring and logging.
- Configured ingress routing with Route53, Kubernetes manifests, and storage classes for production deployment.
- Collaborated on designing a fault-tolerant and scalable DevOps architecture supporting 5+ microservices.

Job Hunting using Web Scraping github

- Developed Job Harvest: a job listing aggregator using web scraping and NLP.
- Used BeautifulSoup, Selenium, and Pandas to scrape job data from multiple sources.
- Fine-tuned a T5-based NLP model for summarization and job relevance.
- Integrated Google Translate API for bilingual (Arabic/English) support.
- Built frontend using TypeScript and deployed via Supabase.
- Collaborated on backend architecture and recommender system planning.

SLAM Nurse Robot for Hospitals Using ROS2 github

- Led software development for a mobile nurse robot using ROS2 Humble Hawksbill to enhance hospital operations.
- Developed and integrated SLAM algorithms for real-time mapping and localization.
- Implemented path planning techniques for obstacle avoidance and efficient navigation.
- Integrated Raspberry Pi for sensor data processing and real-time control.
- Conducted testing and debugging to ensure safety and reliability in clinical settings.
- Documented architecture, algorithms, and testing for future enhancement.

LEADERSHIP / EXTRACURRICULAR

Connectors Team

Apr. 2023 – Jul. 2025

Founder & Team President

Daqahiliya, Egypt

- Founded and led Connectors Team: over 200 students working on AI, Robotics, IoT, and Embedded Systems.
- Directed 3+ major technical projects with focus on hands-on learning and innovation.
- Led Shot-Bot 106 project—an AI-integrated 180-degree camera—that achieved recognition in two university competitions.
- Established organizational hierarchy, technical culture, and future vision as tech startup.

Entrepreneurship Rally – Mansoura University Campus

Dec. 2023 – Mar. 2025

Vice President & Entrepreneurs Development Director

Daqahiliya, Egypt

- Led the development and execution of entrepreneurship training programs to equip students with practical business skills.
- Organized and delivered workshops in collaboration with industry experts on strategy, innovation, and market analysis.
- Supervised cross-functional teams to ensure seamless coordination of logistics, speaker engagement, and session delivery.
- Contributed to the strategic growth of the society by expanding outreach and deepening university-wide impact.
- Implemented performance evaluation mechanisms to ensure continuous program improvement and long-term value.

Techno Kids Mansoura University

Oct 2022 – Jan 2024

Programming & Arduino Instructor

Daqahiliya, Egypt

- Volunteered to teach programming and Arduino basics to children through fun hands-on projects.
- Helped students understand sensors, motors, and microcontrollers using beginner-friendly circuits.
- Encouraged curiosity and creativity by making technology accessible and engaging for youth.

HONORS & AWARDS

2nd Place – University’s Ideal Student 2025–2026

2025

Earned first place at the faculty’s Ideal Student and Qualified for The University Ideal Student Finals

1st Place – Faculty’s Ideal Student 2025–2026

2025

Earned first place at the faculty’s Ideal Student and Qualified for The University Ideal Student Finals

3rd Place – Benha Hackathon 2024

2024

Third Overall and in “Empowering People of Determination in Sports/Health” for an AI-driven solution.

RELEVANT COURSEWORK

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| <ul style="list-style-type: none"> • Machine Learning Specialization • Neural Networks & Deep Learning • Embedded Systems Diploma • MATLAB Onramp • DataCamp AI Engineer for Developers Associate certificate • Oracle Cloud Infrastructure 2025 Certified AI Foundations | <ul style="list-style-type: none"> • Associate • Oracle Cloud Infrastructure 2025 Certified Data Science Professional • Oracle Cloud Infrastructure 2025 Certified DevOps Professional • IELTS Academic 7.0 Band Score |
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EDUCATION

Mansoura University

Sep. 2021 – Feb. 2026

B.Eng. in Artificial Intelligence Engineering | GPA: 3.47/4.00 | Grade: B+

Daqahiliya, Egypt