Ahmed Abdelrahman Gaber

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Summary

Senior Computer Science student with a Minor in Artificial Intelligence (graduating June 2025), skilled in full-stack development, embedded systems, and machine learning. Built and deployed scalable, end-to-end solutions—such as a heart murmur detection system with custom hardware, real-time mobile apps, and AI-driven plant health monitoring. Experienced with Python, Java, JavaScript (MERN stack), SQL, and a wide range of AI/ML tools. Strong foundations in OOP, data structures, and system design. Proficient in version control (Git) and agile collaboration. Eager to apply my passion for solving real-world problems through technology and continuous learning in dynamic team environments.

Education

Misr International University **Cairo, Egypt**
Bachelor's Degree in Computer Science, Minor in Artificial Intelligence, GPA: 3.3 *Sep. 2021 – Expected Jun. 2025*

Dr. Nermien Ismail (NIS) **Cairo, Egypt**
High School Diploma *Graduated: 2021*

Technical Skills

Languages

- Python
- Java
- C++
- C
- HTML/CSS
- JavaScript
- SQL
- PHP
- Flutter/Dart

Technologies/Frameworks

- Linux
- Microsoft Office
- GitHub
- MERN Stack
- Pytorch
- Tensorflow
- Overleaf
- Unity

Experience

QNB Bank | *IT division* **July 2024 – August 2024**

- Rotated through six key IT departments: Architecture Design, Governance, Risk Compliance (GRC), Business Relationships Emerging Technology, Technology Operations, Solutions Development, and Business Solutions.
- Gained hands-on experience in system architecture, risk management, business technology integration, and operational support.
- Developed a comprehensive understanding of IT operations and collaboration across various functions, enhancing knowledge of industry best practices and innovation.

Projects

SONOCARDIA — Graduation Project | *Ongoing* | *AI, Embedded Systems* **Sep 2024 - Expected Jun 2025**

- Designed and built a complete end-to-end system combining hardware, AI, and a mobile application for early detection of heart conditions using heart sound and ECG data.
- Developed a custom hardware prototype using ESP32, MAX9814 microphone module, and additional sensors to capture high-fidelity heart sounds and ECG signals
- Implemented machine learning and deep learning models including CNN with transfer learning and XGBoost to classify heart murmurs and predict heart diseases.
- Extracted and analyzed key audio features such as MFCC, mel-spectrogram, and chroma for accurate murmur detection.
- The system detects murmur presence, location, timing (e.g., systolic), and acoustic characteristics like shape, grading, pitch, and quality.
- Integrated the AI pipeline into a real-time mobile application for live data capture, on-device processing, and instant predictions.
- Achieved high classification accuracy with optimized runtime and patient-level analysis for reliable performance in practical scenarios.

Smart Plant Monitoring System | *IoT, Mobile App, AI, Image Processing* **Sep 2024 – May 2025**

- Developed an integrated smart system combining hardware sensors, a mobile app, and AI to monitor plant health.
- Designed and built a hardware unit with sensors to measure soil moisture, temperature, humidity, and light.
- Created a mobile application that displays real-time sensor data and alerts users of plant care needs.
- Trained an AI model to detect and classify plant diseases from images captured via the mobile app.

Data science stock price forecasting | *Python* **Sep 2023 – May 2024**

- Collected and preprocessed historical stock price data.
- Implemented five predictive models: ARIMA, XGBoost, Ridge Regression, Linear Regression (WMA), and Gradient Boosting.
- Evaluated model performance using various metrics and visualizations.
- Documented methodologies, results, and insights in a research paper.

Document Analysis Using Deep Learning: Topic Identification | *NLP, Deep Learning* **Sep 2024 – May 2025**

- Developed a deep learning-based NLP system to automatically identify topics in text documents.
- Implemented and compared LSTM and GRU models for effective sequence learning and topic classification.
- Curated and preprocessed a high-quality dataset to ensure meaningful topic representation and robust model performance.
- Documented the methodology, experiments, and results in a detailed research paper.

E-commerce Web Development | *JavaScript, HTML, CSS, MERN Stack* **Sep 2022 – May 2023**

- Developed an e-commerce platform for electronic devices using the MERN stack, featuring an advanced product catalog, intuitive shopping cart, and secure checkout.
- Ensured a seamless user experience with a responsive design, integrated administrative tools, and real-time analytics.
- Implemented an SEO-friendly architecture to boost visibility on search engines.

Pedestrian Detection | *Image Preprocessing, Deep and Machine Learning* **Oct 2023 – Dec 2023**

- Developed a pedestrian detection system combining deep learning and machine learning techniques to enhance detection accuracy.
- Applied various image preprocessing techniques to improve input quality and model performance.
- Trained and evaluated models on benchmark datasets to ensure robust pedestrian recognition under varying conditions.

Relevant Coursework

- Data Structures
- Software PM
- Algorithms
- Database Management
- Artificial Intelligence
- Machine Learning
- Advanced AI
- Data Science
- Intelligent Agent
- NLP
- Game Development

Skills

- Problem Solving
- Project Management
- Teamwork
- Time Management
- Fast Learner
- Communication Skills
- Critical Thinking
- Adaptability
- Decision–Making
- Attention to Detail

Languages

- Arabic (Native)
- English (Advanced High)
- German (Elementary)