AMR ABDELBAKY

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EDUCATION

The American University in Cairo (AUC) Egypt May 2025
Bachelor of Science in Computer Science With Specialization in Artificial Intelligence GPA: 3.72
Minor in Mathematics Undergraduate

Languages	JavaScript, Solidity, Rust, Python, Verilog HDL, C++
Software & Tools	Git, Docker, LaTeX, ReactJS
Course Work	Data Structures & Algorithms, Linear Algebra, Applied Probability, Statistical inference, Graph Theory, Compiler design, Database systems, Fundamentals of Machine Learning, Deep Learning, Computer Architecture, Operating Systems, Practical Data Science, Computer Vision.

WORK EXPERIENCE

Machine Learning Engineer Feb 2025 - Present
HNE Futures

- Built predictive models (Lasso, Ridge, XGBoost) to estimate EV energy consumption and battery range using web-scraped data and multiple domain-specific datasets, incorporating feature engineering and robust preprocessing pipelines.
- Developed an AI chatbot that leverages the curated EV dataset to respond to user-specific queries.
- Built a localization model to optimize EV charging station placement within districts in Egypt.

Data Analysis Intern June 2024 - August 2024
School of Libraries and Learning Technologies,The American University in Cairo

- Collaborated on a project analyzing bibliographic records to identify items available in electronic formats via open providers like HathiTrust.
- Conducted overlap analysis between library catalog holdings and external databases using MARC format and MARC-8 encoding.
- Worked with unique identifiers such as ISBN, LCCN, and OCLC numbers to improve the library's consolidation and resource planning.

Technical Support July 2023 - August 2023
Mountain View Developments

- Provided comprehensive technical support, offering troubleshooting expertise and resolving user queries promptly and effectively.
- Communicated directly with our users to provide quality service.

ACADEMIC PROJECTS

Air Temperature Forecasting Model, Air Temperature Forecasting Model February 2024 - May 2024
Outdoor Air Temperature Prediction *Group Class Project*

- Developed a machine learning model to predict outdoor air temperature using over 8.39 million data points from the **Climate Weather Surface of Brazil**. The model incorporates advanced pre-processing, several machine learning algorithms including Boosted Decision Trees and Neural Networks, showcasing deep insights into meteorological data handling and predictive modeling.
- Deployed the model for end-user interaction through Streamlit, making the prediction tool accessible for real-time use. Users can access and utilize the model at Temperature Predictor.

Linux based bandwidth Network Monitor and Controller, Network Monitor February 2024 - May 2024
Linux-Based Network Monitoring and controlling Tool *Group Class Project*

- Implemented a comprehensive Linux-based network monitoring tool from scratch, featuring live data representation, historical data recording, and bandwidth throttling.
- Developed a graphical user interface (GUI) using the **Tauri** toolkit and **ReactJS** framework in **Rust** programming language for real-time monitoring and easy analysis of network data in addition to a command line interface (CLI).

Processor, Processor September 2023 - December 2023
A RISC-V ISA Processor *Group Class Project*

- Engineered and brought to life a high-performance processor adhering to the RISC-V ISA standards, meticulously designed on the **Nexys A7** platform utilizing the power of **Verilog HDL**.

RISC-V Simulator , RISC-V simulator — February 2023 - May 2023
RV32I ISA implementation — *Group Class Project*

- Implemented a robust RISC-V simulator supporting the RV32I Base Instruction Set using **C++**, demonstrating proficiency in both RISC-V architecture and advanced **C++**programming.

Calculator, Calculator — September 2022 - December 2022
Digital Calculator — *Group Class Project*

- Engineered and actualized a sophisticated calculator application on the **FPGA Basys-3** board, employing **Verilog HDL** to demonstrate advanced hardware design proficiency.

File Compressor , File-Compressor — February 2022 - May 2022
Huffman file compressor — *Group Class Project*

- Developed and deployed a file compression program utilizing the Huffman coding technique, effectively reducing file sizes with precision and enhancing data storage efficiency.

EXTRACURRICULAR ACTIVITIES

- **Head**, HR Committee, CSEA, AUC — September 2023 - Present
- **Member**, Logistics Committee, 3al Raseef, AUC — September 2022 - January 2023
- **Student Ambassador**, HR Committee, American University Scouting Team — Feburary 2021 - May 2021