Noran Elhalwagui

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Education

Bachelor of Information Technology & Computer Science – Cs General Major, Nile University   Oct. 2023- present
Cumulative GPA: 4.00/4.00

Experience

Junior teacher assistant for CSCI102: Introduction to Programming – Nile University   Oct 2024 – Jan 2025
Giza, Egypt

- Guided students in understanding the fundamentals of programming and Python syntax during weekly lab sessions.
- Assisted students in solving basic programming problems and building a strong foundation in problem-solving techniques.

Post-Quantum Cryptography Research Internship – Nile University
Jun - Aug 2025
C++, Lattice-Based Algorithms, Cryptography
● Researched **NIST PQC algorithms**: CRYSTALS-Kyber, CRYSTALS-Dilithium, and SPHINCS+.
● Implemented **CRYSTALS-Dilithium in C++**
● Collaborated with a team to **optimize performance** and integrate PQC into real-world systems

Awards and Honors

BanQue Misr Bachelor's Scholarship   Sep. 2023

- Received a prestigious full bachelor's scholarship valued at 500,000 EGP, awarded to the top 8 students nationwide for exemplary leadership skills, exceptional academic performance, and notable extracurricular accomplishments.

Technical projects

Movie watch website and cinema booking website:
Nov.2023

- Developed a comprehensive movie watch website and cinema booking platform using HTML and CSS.

Python PyQt5 Application: Study Helper   Dec.2023
Python, GUI, Desktop Application, Design and Development, Qt Designer

- Created a multi-page desktop app with a user-friendly interface using Python and PyQt5.
- Included four key features: Home, Text-to-Speech, To-Do List, and Timer.
- Improved the design with Qt Designer, JSON stylesheets, and PyQt5 tools.

University Registration System   May,2024
comprehensive university registration system using c language.

- **Features:**
    - **Login:** Secure user authentication system.
    - **Add and Drop:** Functionality to manage course enrollment.
    - **Database Management:** Utilized files to store and retrieve data.
    - **View Profile:** Allows users to view and update their profiles.
    - **Course Cart:** A cart system to manage registered courses.
    - **Fee Calculation:** Displays the fees for the registered credit hours.

University Management System: Data Structures-Based Application
C++, Data Structures (Linked List, Stack, Queue, BST, Hash Table), OOP

- Developed a university management system to handle student records, course enrollments, and registrations efficiently.
- Implemented key data structures:
    - **Single Linked List** for student records management.
    - **Binary Search Tree (BST)** for organizing and searching course records.
    - **Queue** to manage course waitlists.
    - **Hash Table** for fast course lookups.
    - **Double Linked List** to track students' course enrollment history.
    - **Stack** to validate course prerequisites.

- Optimized search operations using **Linear and Binary Search**.

ATM Banking System Simulation   May,2025
Java, JavaFX, FXML, Encryption, OOP

- Built an ATM simulation with customer and admin interfaces for banking operations.
- **Customer Features:** Account balance, deposit, withdrawal, and profile viewing.
- **Admin Features:** Secure login, add/delete accounts, view all account data.
- **Security:** Encrypted text file storage for data protection.
- **GUI:** JavaFX/FXML interface with CSS styling and MVC controller architecture.

Maze Solver Visualization Tool   May,2025
Python, Tkinter, Graph Algorithms

- Developed an interactive maze solver with dynamic maze generation and multiple pathfinding algorithms.
- **Maze Generation:** Randomized Prim's algorithm for creating complex maze layouts.
- **Pathfinding Algorithms:** Implemented 6 solving methods - DFS, BFS, Dijkstra, Bidirectional Search, Greedy, and A*.
- **Performance Analysis:** Real-time calculation and comparison of steps and execution time for each algorithm.
- **GUI:** Tkinter-based visualization interface allowing users to select algorithms and observe solving processes.

VOLUNTEERING & EXTRA-CURRICULAR ACTIVITIES

ICPC Nile University - Giza   Nov.
2023
Junior mentor and Trainee

- Assisted beginners in solving problems and grasping the fundamentals of problem-solving.
- Trained in advanced problem-solving techniques and algorithms.
- Competed in the ECPC 2024 as a contestant, and secured the 36th place out of 105 teams from the university
- Competed and Organized NUCPA, competition Organized by NU ICPC

Enactus Nile University-Giza

Trainee
- Worked as a member of the project management team.   Dec. 2023
  - Gained practical experience in project management techniques and strategies
  - . Learned the principles of academic research.
- Worked as a member of the presentation team.   Oct. 2024
  - Gained valuable skills in presentation, performance, and scriptwriting to represent Enactus Nile University in competitions.

Skills

Programing languages: C, C++, Python, HTML/CSS, SQL,Java,JavaFX
Soft Skills: Public Speaking | Teamwork | Mentorship | Leadership
Hard Skills: Microsoft Office | Research | Git/Github |Internet of Things (IoT) | Electronics | Algorithms | Data structures | Problem solving | Competitive programming | Video Creation | Graphic Design .
Languages: Arabic (Native) | English (Fluent) | French (Elementary)