Aya Hamed

Communication and information Engineer

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EDUCATION

Zewail city for science and technology   6th of October, Egypt
Communication and Information Engineering

Red Sea STEM school   Hurghada, Egypt
High school graduate

SKILLS

Programming Languages C++, Python, JavaScript, C#, SQL	**Web Development** HTML, CSS, Bootstrap, ASP.NET 🔗
Tools & Platforms GitHub, Visual Studio, SSMS, LTSpice, Logisim	**Hardware & Simulation** SystemVerilog, FPGA, Circuit Design
Scripting Bash, Shell	**Concepts** Data Structures, OOP, Operating Systems

LANGUAGES

Arabic Native	**German** Basic (A2)
English Fluent (C1)	**Turkish** Beginner (A1)

PROFESSIONAL EXPERIENCE

The Experiment Digital STEAM Discovery Lab
Alumna Fellow

Stevens Initiative - Aspen Institute
Alumna Fellow

Software Engineering Trainee – ALX Africa Program
Completed a 12-month software engineering program, specializing in Back-End Development. Gained hands-on experience in data structures and team-based projects.

Entrepreneur – ALX Founder Academy
Developed a business plan while gaining foundational knowledge in business strategy, market analysis, and entrepreneurship.

Front-End Developer – Digital Egypt Pioneers Initiative
Completed a 10-month front-end training program focused on HTML, CSS, Bootstrap, JavaScript, TypeScript, and Angular frame work.

Udacity/Digital Egypt Cubs Initiative (DECI)
Part-time Coding/Programming instructor

AIMentor
Part-time Coding/Programming instructor

Preply
Delivering beginner-level programming ex: web development and AI lessons

HR Recruiter – Staffit | Freelance
Conducted candidate screening, job outreach, and applicant tracking for tech-related freelance positions.

Techno future Zayed branch (Canadian franchise)
Instructor
Teaching kids-teens different programming languages , electronics and robotics

PROJECTS

Autonomous Robot	2025

Autonomous Robot that navigates and interacts with its environment using ultrasonic sensors for distance measurement and object detection

Spectral Estimation and Digital Filtering of an Audio Signal	05/2025

Pipelined ARM Processor	12/2024

by using system Verilog to support (Data proccessing, LDR, STR and Branch instructions besides handlind the hazards (RAW/LDR and control hazards)

Operating Systems Memory	12/2024

modified "OS scheduler" to provide memory allocation capabilities using the buddy memory allocation systern.

Audio Amplifier	11/2024

Hardware implementation of a Circuit designed to increase the power, volt or current of audio signal

SAP I Architecture	11/2024

by using Logisim "hardware simulator"

Operating Systems Scheduler	10/2024

by using C language and Linux platform it determines the order for the execution of its scheduled processes according to Short Job First (SJF), Preemptive Highest Priority First (PHPF), Round Robin (RR) algorithms

Under Siege, the Last Stand	07/2024

Simulation program for a battle between your castle and enemies by using data structures/C++

Distortion Calculator	05/2024

measures the distortion percentage in the input signal

Circuit Design of Piezoelectric Transducer   04/2024
Design of a complete signal conditioning circuit including amplification and
filter, by usning "LTspice and Wave Forms.

Brick Breaker game   2024
C++/OOP-based/CMU lib

Shape Haunt   2024
C++/OOP-based/CMU lib

Blood Donation   2024
A website that connects donors/oraanization with each other

Turtle race game   2023
Based on Python language.

LearnFlex   2023
Business plan about online educational platform.

EduTech solutions   2023
Developed a business plan for a VR-powered educational service that
provides students with remote access to interactive lab simulations.

No-Blades   2022
It generates electricity from hydroelectric power by using ne blades.

Even Pure   2021
It works on reusing wastewater from the textile industry by using chemicals.

Floating Bridge   2020
A bridge that float on water without buays only by using Physics laws and
suitable design

Leadership & Exchange Programs

Alumna Fellow – The Experiment Digital STEAM Discovery Lab (Stevens Initiative – Aspen Institute)
Completed a cross-cultural STEAM-focused virtual fellowship with global peers

Participant – U.S. Government Exchange Program
Selected for competitive international youth leadership experience

Delegate – Global Youth Climate Summit (BYLC – Bangladesh)
Engaged in global discussions on climate change and youth-led impact

Participant – California Youth Leadership Summit

Participant – International MUN Internship
Engaged in global policy simulations to develop diplomatic, research, and problem-solving skills by
addressing real-world issues across various UN committees.

Awards & Competitions

Participant-TIEC-Innov Egypt
Completed a national training on innovation, design thinking, and entrepreneurship fundamentals.

Participant – International Science and Engineering Fair (ISEF)
Represented in one of the world's most prestigious science competitions

Participant-Blastoff "National Science & Engineering Fair"
Qualified to Pre-Final – Blastof National Science & Engineering Fair

Participant-International Youth Math Challenge: IYMC

Participant – SIC STEM & Entrepreneurship Competition
A national competition focused on STEAM and entrepreneurship, encouraging participants to simplify complex scientific issues and propose solutions aligned with UN sustainability goals.

Participant – Egyptian Junior Research Competition
A national competition recognizing impactful undergraduate research, organized as part of the UGRF initiative to showcase course-based project outcomes.

Bronze Honor – International Astronomy & Astrophysics Competition (IAAC)
Recognized for outstanding performance in international-level science competition

Volunteering & Student Activities

HR Member – TEDx 6th October

HR Member – Google Developer Group (South Valley)

HR Manager – STEM MUN – Bani-Suef

HR/Instructor – Young Philosophers Kids Initiative

HR Manager – Nafsak Initiative

Organization Committee – Aqua Team

Volunteer – Egyptian Red Crescent (ERC)

Volunteer – Resala Charity Organization

Robotics & 3D Design Team – Red Sea STEM Fab Lab

Head of HR – X-Play Team

Academic Writer – صحيفة الواقع أرض