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01 PROFILE

I am a ***passionate voyager*** in the midst of an endless ocean of knowledge. ***Bachelor*** in Nanotechnology and Nanoelectronics Engineering. ***Game Developer*** at ITI Game Development Academy (GDA). Interests include computer programming, VLSI design, EDA tools, embedded systems, Internet of things (IoT), artificial intelligence (AI), mixed signals, IC design and video game development. Recently completed ***Deep Learning*** and ***Accelerated Computer Science Fundamentals*** specializations on **Coursera.** Currently pursuing ***Game Design and Development*** specialization on Coursera and have successfully ***completed the first course***. I am *always* keen on learning the latest cutting edge technologies and am *constantly* on a path of self-improvement.

02 EDUCATION

Nov 2021 — Present

Giza, Egypt

Information Technology Institute (ITI)

9 months Professional Training Program, Game Development

Courses/Programs covered include: -

- C++ Object-Oriented Programming & Data Structures
- Visual C# .NET
- Game Design
- UI & UX Design
- Computer Graphics & Shaders
- Unity3D
- Unreal Engine
- Game Network
- Artificial Intelligence
- Virtual Reality

2016 — 2021

Giza, Egypt

University of Science and Technology at Zewail City (ZC: UST)

B.S.C in Nanotechnology And Nano-Electronics Engineering

GPA around 3.0

Double Focus concentration:

- Nano-VLSI

- Nano-Fabrication and MEMS

2015 — 2016

Cairo

M.S.G British International School of Egypt

I.G.C.S.E. High School Degree

International General Certificate of Secondary Education.

GPA 4.0. Magna cum laude.

03 EMPLOYMENT HISTORY

Jan 2020 — May 2020

Giza, Egypt

Summer Internship at Zewail City of Science and Technology · Part-time

Embedded Software and Hardware Internship:
Implementing real satellite Terminal Software. GSE, MPLS, SISAP communication protocols implementation. Hardware implementation of RTEMS on Xilinx zynq-7000 FPGA board.

Jan 2019 — Dec 2020

Alexandria, Egypt

Junior Researcher at Zewail City of Science and Technology · Part-time

Design and implementation of T-shape microfluidic chip for use in micro-droplet and Janus particle formation. Simulation carried out on Cadence software. CAD tools utilized in modeling include SOLIDWORKS & CORELDRAW software. Physical design laser-printed at Egypt Japan University (E-Just) for practical testing.

Nov 2021 — Present

Giza, Egypt

Game Developer at Information Technology Institute (ITI) · Full-time

9 months professional Training Program Student. Game Programming Specialization ITI - Game Development Academy (GDA) - Intake I42. A product based program that will empower you to learn the required skills and knowledge in all aspects of Game Development from the basics to the advanced topics, from a real-world industry perspective to develop 2D, 3D and XR game applications to build a top-notch portfolio.

04 TECHNICAL SKILLS

Git	●●●●●	VHDL	●●●○○
Matlab/Simulink	●●●●○	HTML & CSS	●●●○○
C/C++	●●●●●	Javascript	●●●●○
C#	●●●●●	PHP	●●○○○
Unity	●●●●●	Verilog A	●●●●●
Unreal Engine	●●●●●	Cadence	●●●●●
System Verilog	●●●●○	Microsoft Office	●●●●●
Python	●●●●●		

05 SOFT SKILLS

Judgement and Decision Making

Strategic Project Management

Leadership

Entrepreneurship

Communication

Teamwork

ACHIEVEMENTS

British Council: CIPP Outstanding Achiever
2010 - 2011

Habitudes Leadership Training
2014

2nd place in Alabakera TV Show competition
2016

PROJECTS

ASIC Flow: Optimization of Power, Area & Frequency of a designed RTL Code using DC Compiler Tool.

Two-stage Operational Amplifier using CADENCE (Pre-Layout Simulation)

Audio Amplifier Circuit – Design and Implementation using Cadence (Pre-Layout Simulation)

Analog to Digital Converter (ADC) using CADENCE (Pre-Layout Simulation)

Modeling a 90-nm NMOS and PMOS With COMSOL

Diamagnetically levitated electrostatic micromotor (DLEM) model and fabrication

Temperature Sensor based on Light Transmittance inside an optical fiber using COMSOL

NMOS Transistor Fabrication using SENTAURUS

Write and develop C++ EDA tool to calculate connectivity matrix, partition, perform floor-planning and measure merits of each path.

Design RF / Mixed signals LNA in Cadence and ASITIC. Merits calculated for pre- and post- (DRC, LVS and PEX) layout simulation.

Adv. MEMS simulation of electrostatic microvalve.

06 EXTRA-CURRICULAR ACTIVITIES

2016 — 2017

Giza, Egypt

IT, Media & Marketing committee head, EUROAVIA, Zewail City

2016 — 2018

Giza, Egypt

Committee member, IEEE, Zewail City

2017 — 2018

Giza, Egypt

Volunteer, Resala Charity Organization

Volunteer for fundraising and aiding the charity organization in Cairo branch

07 LANGUAGES

English	●●●●●	German	●○○○○
Arabic	●●●●●	Japanese	●●●○○
French	●●○○○		

08 COURSES

Dec 2021

Accelerated Computer Science Fundamentals Specialization at Coursera

Jan 2022

Deep Learning Specialization at Coursera

Jan 2022

Game Design and Development 1: 2D Shooter at Coursera

09 EXPERIENCE

2020 — 2021

Giza, Egypt

Undergraduate Mems and Microfluidics Graduation Project With Excellent Grade at ZC:UST under supervision of Dr. Noha Gaber

Design of novel electrostatically powered peristaltic micropump with a single chamber and NED cantilever structure. A thorough fabrication recipe was developed. NED cantilever structure provided a permanent solution for pull-in effect in electrostatic based systems. Wide range of applications as it can be used in precise drug delivery/dosing systems, developing cooling systems for electronic systems, such as System-on-a-Chip and embedded systems, as well as Lab-on-a-Chip and testing kits. ITAC-CFP - ITIDA Funding.

2019 — 2020

Giza, Egypt

ASIC Design And Implementation Of 32 Bit Mac Unit at ZC:UST under supervision of Dr. Hassan Mostafa

Cadence Virtuoso Simulation design and implementation of 32 bit MAC unit with pre- and post-layout merits (delay, power &area)

2021 — 2021

Giza, Egypt

Analog Mixed Signals 10-bit SAR ADC at ZC:UST under supervision of Dr. R. El-Damak

Design of a 10 bit ADC for wearable brain computer interface system using the 90 nm generic PDK on Cadence Virtuoso with 1 V supply with a 32 kHz sampling rate. Implementation of rate Successive Approximation Register (SAR) ADC, Sample and hold circuit (SHA) and Digital to Analog Converter (DAC). The ENOB and SNR are measured to be 6.7, 42.22 dB respectively, giving a FOM = 2.85pJ /Conv step.

2021 — 2021

Giza, Egypt

Testing And Verification Of IP In UVM Environment at ZC:UST under supervision of Dr. Hassan Mostafa

Implementation of Universal Verification Methodology (UVM) using UVM 1.2 package on EDA playground / System Verilog. Testing and verification of encrypted intellectual property (IP).

Oct 2019

Giza, Egypt

C++ Connectivity Matrix and Partitioning EDA Algorithm at ZC:UST under supervision of Amr Nabil Helmy

Written a C++ program which partitions an even number of cells using Kernighan-Lin partitioning algorithm after obtaining the connectivity matrix of the cells. The input was a pin-oriented netlist, and the output clearly specified which cells belong to which block.

Nov 2019

Giza, Egypt

C++ EDA Functional Algorithmic Project at ZC:UST under supervision of Amr Nabil Helmy

Written a C++ code to read netlist data from a text file, extract the different paths, calculate the maximum propagation delay for each node, do proper partioning, perform floor-planning and then find the longest path and determine the suitable clock period.

10 GAME DEVELOPMENT EXPERIENCE

Nov 2021

Giza, Egypt

OOP & Data Structures for Game Development, ITI GDA I42

Combination of C/C++ OOP projects :

- Implement Magic box algorithm, and switch menu Console program
- Employee Structure application using dynamic allocation , Line editor using pointers
- Double linked list Stack, Queue binary search; bubble sort; selection sort
- Traverse Binary Tree nodes using recursive functions
- Design and Implement Class Complex, copy constructor to Class Stack
- Operator overloading in Class Complex, Abstract Class pure virtual methods

Dec 2021

Giza, Egypt

C++ Resizeable 2D maze generation using vectors, ITI GDA I42

C++ Build of Console program that randomly generates a resizeable 2D maze based on vectors. SFML implementation to allow the user to translate in the generated maze paths to reach a generated goal then choose to replay or close the program.

Dec 2021

Giza, Egypt

Computer Graphics using OpenGL, ITI GDA I42

C++ / OpenGL Implementation of Obj loader. Using glsl shader files to manipulate fragment and vertex shaders. Fractal (Mandelbrot) implementation. 3D simple maze GUI game using openGL utilizing created Mesh, Camera, Gameindow and Shader classes.

Dec 2021

Giza, Egypt

JavaScript and HTML5, ITI GDA I42

Created Space invaders web game. Phaser3 PC Web browser mini-jam game over the course of 3 days: Game concept -> Pen & Paper Prototype -> Game Pitch Document -> Game Assets & Art Creation -> Game programming and development -> Game Script -> Game Demo -> Final Game (itch.io build).

Jan 2022

Giza, Egypt

Visual C# .NET, ITI GDA I42

1. Language-Integrated Query (LINQ) Operators: Restriction, Element, Set, Aggregate, Ordering, Partitioning, Projection, Quantifiers, and Grouping
2. Company Layoff system
3. Object Pooling Patterns to to create a simple Bullets Pool
4. C# Full Examination UI system on C++ Data Structures concepts

Jan 2022 — Feb 2022

Giza, Egypt

Basic and Advanced Unity, ITI GDA I42

1. 3D Urban City Game Scene, Prefabs, Prefab variants, Various Lighting
2. 2D Platformer with idle, jump sprite animations and player movement
3. 2D tilemap platformer with various patrolling enemies and traps
4. 3D reflection and light probes baking and post-processing VR Space room
5. Android touch screen UI functions, canvas 2D memory game
6. UI leaderboard, registration form, puzzle Game with random generation builds
7. Tic Tac Toe game with singleplayer, multiplayer, AI, Scoreboard network framework
8. Cannon ball game with line renderer, physics and Procedural mesh generation
9. IK constraint, blend tree, animation rigging, scriptable objects and events
10. Node Based Shaders Fundamentals with amplify