

# Bassant Hassan

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## Education

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Bachelor of Computer Engineering, The American University in Cairo (2020)

GPA: 3.854

Relevant coursework: Fundamentals of Cs, Programming Fundamentals (C++), Digital Design1, Digital Design2, Assembly Language, Software Engineering, Programming in Java, Digital Signal Processing, Analysis and Design of Algorithms, Data Structures and Algorithms, OS, Financial Accounting, Intro to Business, Engineering Economy, Fundamentals of Database Systems, Computer Networks, Distributed Systems, Mobile Apps, Embedded Systems, Secure Systems Engineering, Internet of Things, Thesis1, Deep Learning, Thesis 2

Minor in Business Administration, The American University in Cairo (2020)

Introduction to Business, Financial Accounting, Business Finance, Engineering Economy, Marketing, Probability and Statistics

IGCSE Certificate, Al Bashaer International School (2016) Score: 142

## Academic Projects

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- Designed a Java program that demonstrates and analyses different CPU/cache interactions
- Designed a program that displays on a webpage the varying waveforms of input and output variables using JavaScript and HTML
- Produced own graphical version of chicken invaders along with 2 team members in C++ / SFML
- Designed in Verilog a calculator that performs arithmetic operations on the user input and displays the output on a separate FPGA
- Designed a pipelined CPU model that supports compressed instructions and handles interrupts using Verilog
- Designed multiple Digital Circuits (schematic and layout) using Electric and LT spice
- Designed a program that executes basic RISK 5 instructions using C++
- Simulated the game Battlefield using Java
- Designed an application to speed up/slow down, remove noise, and eliminate echo from audio .wav files in python
- Simulated a simple shell, and solved the "Sleeping TA" problem using Linux VM
- Simulated a chip A\* Router using Java and Soukup's Router using C++
- Designed a program that compresses and decompresses files using a Huffman tree in C++
- Created an Uber like website with driver, rider, and admin view/ real ride simulation/ an associated database using Node Js
- Set up multiple networks using GNS3 that included ARP, ICMP, DHCP, Static Routing, RIP, OSPF, TCP, DNS, HTTP, EIGRP, and Telnet while verifying and examining captured packets using Wireshark
- Used UNIX sockets and UDP to implement remote invocation middleware with peer-to-peer architecture, steganography-based image service, and added fault tolerance using C++
- Designed several IOS and Android applications including an Android "Smart Alarm" that collects traffic data using a maps API and sets alarms accordingly
- Simulated an IOT-based Building Management System using COOJA
- Created an embedded application that runs on the STM32F103C8 microcontroller and interfaces with the AD8232 heart sensor in order to plot the heart signal and calculate the BPM
- Created a neural network that would predict the most suitable NFL player position
- Created a "Synthetic Image Generator and Refiner" for my thesis project in partnership with Valeo that forms a 3D Unity model based on user specifications and feeds images from that model into a GAN trained for synthetic to real transformation to create a customizable dataset. It was deployed as a webservice as a microservice architecture.

## Extracurricular Activities

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Player at AUC's Track and Field Team (Eagles), AUC (Fall 2019- )

Represent AUC in Track and Field which involves races, relays, javelin throws, long jumps, high jumps, and numerous other related activities.

Projects Head at Enactus AUC (2018)

Was responsible for member recruitment, interviews, and selection Perform weekly meetings and organize outings to motivate members

Proposed project ideas for national competition along with my members

Planned execution of project and studied ways to minimize costs with team  
Produced financial statements and project proposal forms  
Implemented actual project which involved rental of venue, purchase of supplies, and hiring of workers in project along with team

#### Player at AUC's American Football Team (Titans), AUC (Spring 2017- Fall 2018)

Position: Cornerback / Linebacker (defense)

Participated in EFAF football season and was the team representative

#### Organizing Committee Vice President for Marketing and Documentation, AIESEC AUC (Spring 2017)

Promoted offline campaigns and managed college relations

Designed T-shirts, notebooks, and other logistics using Adobe Photoshop

Interviewed members and made sure they are up to standards

#### Middle Manager for Marketing, AIESEC AUC (Fall 2016)

Managed Team by preparing weekly meetings, organizing several outings, and making sure they are on track and motivated

Designed & printed flyers for campaigns using Adobe Photoshop

Lead and organized campaigns by setting up the booth, preparing logistics, performing campaign education sessions, and monitoring applications

#### One of the 4 main contestants in "El Abakera" TV-show, "El Kahera w El Nas", (2016)

Represented my school in an IQ competition against 16 other schools

## Experience

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#### Computer's Networks Teacher's Assistant (Fall 2020)

AUC

Assisted students and had fixed office hours

#### Enterprise Marketing Intern (Summer 2020)

Vodafone Egypt

Spoke to sales about new products such as SDWAN, did feasibility analysis on bundles and offers, came up with ways to market new products, and worked on promoting products on the website

#### Computer Architecture Teacher's Assistant (Summer 2020)

AUC

Assisted students in course work and project

#### Computer's Networks Lab Teacher's Assistant (Spring 2020)

AUC

Assisted students during the lab, and had fixed office hours

#### Web Developer (Summer 2019 - Fall 2019)

The Center of Nano-electronics & Devices of AUC

Created a user-friendly interactive website that proposes ideal solutions to clients based of their needs while creating all the necessary pdf reports and financial statements, and created the necessary database using MySQL.

#### Fundamentals of Cs Teacher's Assistant (Fall 2018)

AUC

Graded Assignments / had fixed office hours and lab sessions

## Skills

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#### Languages:

- Fluent in spoken and written Arabic and English
- Some knowledge of French
- Fluent in Java, C++, C, MIPS, Verilog, Python, JavaScript, HTML, Node Js, and MATLAB

#### Computer:

- Excellent knowledge of Visual Studio, MARS, Office 365 Applications, Vivado, NetBeans, Linux VM, LT Spice, Anaconda, Keil, Jetbrains IDEs, Contiki OS, DVL OS
- Familiar with the following hardware: FPGA, STM32F103C8 microcontroller, AD8232 heart sensor, UBLOX 6 GPS receiver, TIVA C TM4C123G microcontroller, DS3231 RTC, HC-SR04 ultrasonic sensor
- Moderate Photoshop skills