# ABDELSALAM ELTAMAWY

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#### **ABOUT ME**

# 

As a highly motivated computer engineer, I am confident in my skills in software engineering and academic research proving valuable to any team. Seeking to Create tailored solutions to novel problems.

#### **EDUCATION**

#### The American University in Cairo (AUC)

**#** 2017-2022

- Cairo
- > BSc in Computer Engineering
- > Graduated with High Honors. GPA: 3.6/4.0

#### International School for Elite Education

**#** 2011-2017

Cairo

> Graduated with High Honors

#### SELECTED PROJECTS

# Machine learning based decompiler (7)

**#** 2021-2022

Python | Pytorch | Graph ML | Anaconda

- > Transformer based decompiler targeting android.
- > Novel tree graph generator for AST representation.
- > Designed to be a forensic malware tool.

# Persistance of vision display (7)

**## 2021** 

Embedded | C | STM32 | ESP32 | HAL **ESP-IDF** 

- > Created high speed fan display and embedded system to fulfill millisecond timing constraints.
- > Featured embedded web server for user accessibility.

# 

[Python] [CUDA] [Deep NN] [CNN]

- > CUDA accelerated ML library.
- > Implemented training and inference framework for deep neural networks and convolutional neural networks.

# Distance sensor from scratch (7)

**# 2021** 

Embedded C STM32

- > Ultrasonic distance sensor.
- > Reverse engineered market boards to create a more accurate sensor.

## RISC-V microarchitecture

**#** 2021

Verilog | (RISC-V ASM) (Xillinix)

> Implemented 6 pipeline RISC-V microarchitecture on an FPGA in Verilog fulfilling specification requirements.

#### Pacman clone (7)



**#** 2018

OOP SFML C++

- > Recreated first 3 levels of Pacman.
- > Complete with level editor and online user scoreboard.

#### **EXPERIENCE**

#### Graduate teaching assistant

2022-present

- AUC
- > Taught CUDA and parallel programming concepts to students in GPU computing course.
- Orchestrated deployment of standardized docker environment for students.

#### Undergraduate teaching assistant

- AUC
- Assembly&Comp Organization 2021-2022
- > Computer Architecture
- **#** 2020-2021
- Department Tutor
- **#** 2019-2020
- > Programming Fundamentals
- **2018-2020**

#### Lead research assistant

**#** 2020-2021

- AUC
- Led team of 4 to create a process that builds application specific RISC-V based CPUs.

#### Al development intern

**#** 2020-2021

- ▼ Tod-Z (remote)
- > Led AI and machine learning development.
- > Built entire machine learning stack from concept to training to deployment on AWS.

#### Intern

**#** 2020

- Agile technologies (remote)
- > Built web store using OutSystems.
- Regularly communicated for quality assurance.

### **EXTRACURRICULAR**

#### **ROV** media head

**#** 2017-2019

- AUC
- Led team of 5 to market and document Robotics club's remotely operated vehicle events.
- > Photographed and documented dozens of events and directed 4 marketing videos.

#### Assistant media head

**#** 2017

- AUC insider
- > Lead photographer for AUC news paper.
- > Published over a dozen photographs covering local events.

#### **PUBLICATIONS**

#### A Neural Generation Framework for Android Decompilation (Abdelsalam, et al.) **#** 2022

- (Pending Publication)
- > Completed Bachelor thesis
- > Created a novel method for tree graph generation.
- > Applied the novel method and transformer translation to Android decompilation.

#### Dive, Eat, Sleep & Repeat

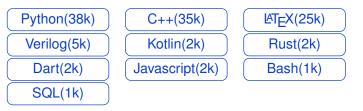
**#** 2022

- Busniess Monthly Magazine
- > Wrote an article on diving in the red sea during shark season.
- > Released in the 2022 august issue of Business monthly.

#### Application specific CPU optimizer ## 2020-2022

- (work in progress)
- > Working on framework to optimize out unused hardware in HDL according to application use case.

#### LANGUAGES (Lines of Code)



#### **HOBBIES**

#### Recreational scuba diver

- > Licensed 2-star CMAS scuba diver.
- > Over 200 dives in the red sea since 2009.

#### PC enthusiast

- > Built own liquid cooled computer.
- > Administering homelab with file, surveillance, DNS servers.

#### 3D printing enthusiast

Designed own 3D printed robot components.

> Traveled to most of Europe, the U.S.A, the Middle East and Africa

#### COMPETITIONS

#### **HackTrick Hackathon**



- DELL EMC
- > Built a reinforcement learning model to compete in material pipeline optimization challenges.

#### **ICPC ACM**

**#** 2019

- AUC
- > Entered local ICPC ACM.
- > Was the youngest participant.

#### **Code Geist Hackathon**

**#** 2019

- Seft Wahed
- Created an app and its pitch in 72 hours.
- > Collaborated in a team of 4.
- Developed a platform to address littering.

#### **MATE ROV**

**2017-2019** 

- MATE
- Joined university's Remotely Operated Vehicle team.
- Contributed to circuit and mechanical design.

#### Science Fair

# 2014

Student Expo

> Won first place at high school level with a 4 wheeled remote controlled robot featuring a 3-axis arm.

SKILLS > Git VCS (Linux) Docker

LANGUAGES >

English (native)

Arabic (native)