## 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

**#** 2018

OOP **SFML** C++

> Recreated first 3 levels of Pacman.

Complete with level editor and online user scoreboard.

**EXPERIENCE** 

#### Undergraduate teaching assistant

AUC

Assembly&Comp Organization 2021-2022

▶ Guided students through ISA, ASM, caching concepts.

> Computer Architecture

2020-2021

Explained micro-architecture for pipelined CPUs.

> Department Tutor

**2019-2020** 

▶ Student driven "clinic" supporting students in studies.

▶ Aided first 4 levels of CS courses through sessions.

> Programming Fundamentals

**#** 2018-2020

Maintained university ACM scoreboard.

▶ Helped students understand OOP and programming concepts.

Lead research intern

**#** 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)

> Lead AI and machine learning development.

> Built entire machine learning stack from concept to training to deployment.

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.

NASA camp

**#** 2015

NASA, atlanta

> Won "Best Camper" award.

## **PUBLICATIONS**

## A Neural Generation Framework for Android Decompilation ## 2022

- AAAI (pending)
- > 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

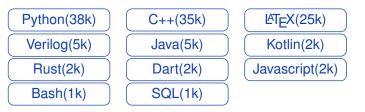
**#** 2022

- 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 chisel unused hardware optimizer ## 2020-2022

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

## 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.

## Travel

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)