






# ABDELSALAM ELTAMAWY

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## ABOUT ME

## Self Introduction Video

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 2021-2022

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

### Persistence of vision display 2021

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

### Machine learning library from scratch 2021

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

### Distance sensor from scratch 2021

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

### RISC-V microarchitecture 2021

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

### Pacman clone 2018





  

- > 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.

### AI 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 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 new 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 De-compilation

2022

- AAAI (pending)
- Completed Bachelor thesis
- Created a novel method for tree graph generation.
- Applied 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) >

Python(38k)

C++(35k)

L<sup>A</sup>T<sub>E</sub>X(25k)

Verilog(5k)

Java(5k)

Kotlin(2k)

Rust(2k)

Dart(2k)

Javascript(2k)

Bash(1k)

SQL(1k)

## HOBBIES

### Recreational scuba diver

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

### PC enthusiast

- Build own liquid cooled computer.
- Administer 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

2022

- DELL EMC
- Build 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 24 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

English

Arabic