

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 📅 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.

Persistence of vision display 📅 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.

Machine learning library from scratch 📅 2021

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 📅 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 Xilinx

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

Pacman clone 📅 2018

C++ OOP SFML

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

Self Introduction Video

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^AT_EX(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