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*
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 *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 | Xillinix
- 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.

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.

AI 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*
AAAI (under review)

- 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)

Python(38k) | C++(35k) | LaTeX(25k)
Verilog(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

- 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 *2022*
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)