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

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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.

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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.

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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.

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Distance sensor from scratch ○   📅 *2021*

`Embedded` `C` `STM32`

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

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RISC-V microarchitecture ○   📅 *2021*

`Verilog` `RISC-V ASM` `Xillinix`

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

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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.

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Undergraduate teaching assistant
📍 AUC
> Assembly&Comp Organization   📅 *2021-2022*
> Computer Architecture   📅 *2020-2021*
> Department Tutor   📅 *2019-2020*
> Programming Fundamentals   📅 *2018-2020*

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Lead research assistant   📅 *2020-2021*
📍 AUC
> Led team of 4 to create a process that builds application specific RISC-V based CPUs.

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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.

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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.

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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.

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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.

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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)

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.

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

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3D printing enthusiast
> Designed own 3D printed robot components.

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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.

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ICPC ACM 📅 *2019*
📍 AUC
> Entered local ICPC ACM.
> Was the youngest participant.

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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.

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MATE ROV 📅 *2017-2019*
📍 MATE
> Joined university's Remotely Operated Vehicle team.
> Contributed to circuit and mechanical design.

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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)