Youssef M. Hussien

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Education

B.S in Computer Engineering — **The American University in Cairo (AUC)** — *Oct 2018 - Jun 2023 (expected)*

- Received a fully-funded merit scholarship from AGFE foundation; 1/50 out of more than 1500 applicants. *CGPA: 3.63/4.0*
- Related Coursework: Fundamentals of programming in C++, Analysis and Design of Algorithms and Data structures, Practical Machine Learning (Deep Learning), Discrete Mathematics, Digital Design I & II, Computer Architecture, Operating Systems.

Online Data Science Training — **Data Insight Platform** — *Sep 2021 – Sep 2022 (expected)*

- Accepted among 100 applicants globally to receive a full-scholarship taking a one year training in the field of data science.
- Taking courses in programming, statistics, machine learning, data visualization and data science through DataCamp.
- Working on delivering a number of 8 practical course-based projects and 2 applied data science capstone projects.
- Writing bi-weekly blogs on different topics in data science and related concepts such as Functions in Python.

Egyptian STEM degree — **Luxor STEM High School, Egypt** — *Oct 2015 - Jun 2018*

- Headed the scientific committee and organized weekly scientific competitions *CGPA: 4.0/4.0*
- National finalist at the International Sciences and Engineering Fair (ISEF) 2017 and 2018.

Publications and Conference Presentations

- Hosny, O., Dorra, E., El-Eslamboly, A., Tarabieh, K., Abotaleb, I., Amer, M. … **Hussien, Y**. (In press). *Designing an Automated Multi-Objective Optimization Model for Integrated and Sustainable Farming*. Proceedings of the 2022 ASCE Construction Research Congress (CRC). Accepted.
- Sakr, N., **Hussien, Y**., & Farid, K. (2021). *Dual-criticality scheduling on non-preemptive, dynamic processors using RL Agents*. In The third international workshop on dynamic scheduling problems (pp. 57-62). Poznań, Poland.
- Speaker: "An RL Approach to Scheduling Mixed-criticality Systems," *EURECA* Conference. The American University in Cairo, Cairo, Egypt, April 2021.
- "A Data-Driven Approach to Scheduling Mixed-criticality Jobs," *INFORMS* Conference. Virtual, November 2020.

Work Experience

Software Engineer, Internship — **Silicon Arena, Egypt** — *Aug – Oct 2021*

- Worked as a front-end engineer in a team of 4 members in an agile framework to build an open-source MVP SaaS ecommerce website. GitHub Link
- Worked on delivering a fully documented software requirements specification (SRS) of the project.
- Developed more than 5 components using React.JS after compiling their respective Software Requirements Specification and constructing their respective UML diagrams.

ML Research Assistant, Part-time — **Department of Computer Engineering, AUC** — *Sep 2019 - Jul 2021*

- Approached a dual-criticality scheduling problem (online & offline) using a set of Reinforcement Learning (RL) algorithms.
- Used OpenAI Gym, RLlib and Stable Baselines to build and import the RL models and used Python primarily.
- Analyzed the models' results and performed Hyperparameter Tuning using TensorFlow and TensorBoard.
- Build the data generator using MATLAB, and used Google Cloud Platforms to run the models.

Software Developer, Part-time — **Department of Construction Engineering, AUC** — *Aug 2020 – May 2021*

- Led the development team in a multidisciplinary research project integrating four subsystems supporting the application.
- Developed a sustainable landscaping and farming optimizer that optimizes the use of lands using Excel VBA.
- Scrapped real-time data from online websites using Python and libraries as Beautiful Soup and Pandas to feed the application

Technical Projects

TravelBuddy "Classroom Project": *Spring 2021*

- Worked in a team of 4-members on developing a full-stack website using React.JS, SQL, and Bootstrap. GitHub Demo

Operating System Development "Classroom Project": *Spring 2021*

- Done a series of mini-projects targeting Shell scripting and Linux Kernel development.
- Used C language, VirtualBox, Linux OS, GNU GCC compiler, modutils and UNIX utility programs. GitHub

SearchEngine "Classroom Project": *Dec 2020*

- Programmed a C++ simulator of how real search engines work.
- Concepts covered as web graph, page ranks, CTRs "click-through rates," and keyword search. GitHub

Cats-Vs-Dogs Classifier "Personal Project": *Jul - Aug 2020*

- Built a classifier to distinguish cats and dogs images using Kaggle cats-dogs dataset with validation accuracy of 90.4%. GitHub

- Used Transfer Learning to improve this classifier by using the inception model. Trained over 1.4 million images from ImageNet and classifies up to 1000 types of cats and dogs. GitHub

MozhelaStore "Personal Project":

- Used WordPress to design and implement a full-stack website as automation of a clothes store.
- Increased the store's sales by 20% through modernizing the store services.

Languages and Technologies

Programming Languages/Tech: C++, Python, Octave, MATLAB, VBA, MySQL, Shell & Bash Scripting, and Kernel dev. in C.
Websites Development Skills: HTML, CSS, JS, Bootstrap, React.JS, Python Scrapy, WordPress, and WIX.
Machine learning frameworks: TensorFlow, Keras, OpenAI Gym, RLlib, Stable Baselines, Google Cloud Platform, and SickitLearn.

Leadership and Extracurricular Activities

Machine Learning Instructor **Google Developer Student Club, AUC chapter** *Aug 2021- present*

- Presented a session to around 40 students from different backgrounds discussing introductory machine learning concepts.
- Introduced the area of machine learning with Big Query and introduced the students to Google QwikLabs and Quests.

Virtual Insight Series Participant **Goldman Sachs & CO.** *Jun – Jul 2021*

- Accepted out of 10000+ applicants to attend a seven-week summer program to sharpen my interview skills and my knowledge about Goldman Sachs & CO. various divisions.

IT Committee Co-Manager **Entrepreneurs Society, AUC** *Sep - Nov 2019*

- Led a 3-members team to initiate the club website using WordPress and Divi.

Development Committee Member **Student Union, AUC** *Sep - Nov 2019*

- Participated in developing the SU website and incorporated Twitter API to retrieve tweets into the events page.
- Used Anaconda, JavaScript, Node.js, and Angular.js.

Certificates and Awards

Machine Learning Track **Google QwikLabs** *Sep – Oct 2021*

Finished the following quests over Google QwikLabs platform (link):

- Machine Learning APIs
- Intermediate ML: TensorFlow on Google Cloud
- BigQuery for Machine Learning

Machine Learning Certificates

▪ Intermediate Python	DataCamp	*Sep 2021*
▪ Intro to Machine Learning	Kaggle	*Aug 2021*
▪ DeepLearning.AI TensorFlow Developer Professional Certificate (100% grade)	DeepLearning.AI, Coursera	*Jul - Sep 2020*
▪ Python for Data Science and AI	IBM, Coursera	*Nov 2019*

First Place Winner, Single-Use Plastic Competition **Mashroo Kheir Club, AUC** *Dec 2018*

- Proposed means to decrease the consumption of plastic and to enhance the dispensers' spots across the campus.

Regional Qualifiers, Imagine The Future Competition **Shell Global, Egypt** *Oct - Nov 2018*

- Imagined how Aswan City, Egypt will be in 2050 and presented a descriptive paper describing this vision in detail.