Ahmad Zaki Street, New Nozha
Heliopolis, Cairo 11843
linkedin

Mahmoud Fathy

(002) 01225904508
ece.mahmoud@gmail.com
github

Education

Arab Academy for Science & Tech **Cairo, Egypt** **Jul 2018**

- **M.Sc. in Computer Science, GPA: 3.63**
- **Coursework:** Advanced Computer Architecture, Computer Networks & Security, Systems Science and Engineering, Advanced Programming Languages, Network Security, Sensor Networks, Pattern Recognition, Computer Security.

Ain Shams Faculty of Engineering **Cairo, Egypt** **Jun 2011**

- **Bachelor of Science in Electronics & Communication Engineering, Distinction (Honors)**
- **Coursework:** Have been educated at the beginning of school years about general topics from electrical engineering. Aftermath, I majored in Electronics and Communication which is a program provided by my school at the time aiming at understanding various communication systems, required electronic implementations to achieve them and microwaves and optics as a way for transmission. In the core of the program we have been exposed to various techniques from mathematics to aid in simulation and modeling and understanding field physics.

Work Experience

Academic Staff **NTI Institute, Cairo** **April 2012 – Present**

- **Brief**
  - Working for Governmental Institute as a trainer responsible for giving training sessions for freshly graduated students, other academic staff members and providing summer training for technical college students. Also participating in supervising graduation projects for some programs which require so from students involved in our training programs.
- **Teaching**
  - Network fundamentals
  - Mobile IP
  - Python Programming
  - Mobile App Development using Flutter
  - IoT Data Analytics by Cisco Academy
  - ICM 6.7 by VMware Academy
  - Network Virtualization by VMware Academy
  - Deep Learning by Huawei Academy
- **Projects**
  - Network Emulator - *Diploma project*
  - Wireless Routing protocols study via Ns-2 - *Diploma project*
  - IoT smart parking (ICT) - *Diploma project*
  - Smart School - *Diploma project*
  - Integrating Kubernetes with VMware NSX-T Data Center - *VMware program*
  - Attendance Phone Application using Flutter - *Required by Director*

Languages, Devices and Technologies

- **Javascript**
  - After discovering about designing web applications using REST-api. JS became the main frontend development tool utilizing mainly React JS and React Native frameworks, with exposure to VueJS.
- **Python**
  - Utilizing python for countless tasks among which datascience using Networkx and Scikit. Also delved in designing deep learning networks using Tensorflow.
- **Solidity**
  - Worked on writing few smart contracts and developed an erc-721 token integrated with zk-SNARKS as a part of the fulfillment of the Capstone project for Blockchain Developer Nanodegree by Udacity.
- **Docker**
  - Gained experience on dealing with docker containers through using it to create my development environments.
- **PHP**
  - Having a fair exposure using laravel framework to develop PHP REST-api backend.
- **Dart**
  - Developed few android applications and experimented on developing a web application using flutter framework which requires dart programming.

- **Golang**
  - Blockchain Fabric have been implemented in Golang. Along with a frontend written in Golang compiled into webassembly.
- **Java**
  - Possessing fair knowledge in Java mainly via Android App Development.
- **Matlab**
  - During academic study years, most projects required writing m-scripts. This included projects in Machine Learning, Optical Modelling and Communication Systems.
- **Linux**
  - Using linux casually in many situation when need requires writing bash scripts, navigating and running specific tools.
- **C#**
  - In the final nanodegree blockchain developer program, I wrote a blockchain dapp frontend in C# featuring blazor.
- **Elm**
  - Worked on attendance software by face recognition in which the admin frontend part implemented via Elm.
- **NoSql**
  - Familiar about NoSql databases gained through working on MongoDB.
- **C++**
  - Master of Science thesis required extensive work in C++ to use ns-3 for the fulfillment of my work.
- **C**
  - Developing programs for Hardware, as I had exposure working on both STM (ARM processors) and arduino boards.
- **IBM Bluemix**
  - Developed nodejs and node-red projects on Bluemix for servers and IoT. Also used Watson for AI.
- **Raspberry pi**
  - Well acquainted in working on developing python and node-red modules on Rpi.
- **Oscilloscope**
  - Familiar with different sorts of measuring oscilloscopes.
- **Latex**
  - Experience in writing short reports, books and presentations in LaTeX.
- **Swift**
  - I have got a brief exposure to swift once it was released.

Seminar Presentations

- Presented seminar on *"Mitigating the impact of malicious node in cooperative sensing Cognitive Radio Networks"* for the fulfillment of M.Sc. degree.
- Presented a seminar on *"Mitigating the impact of malicious behavior via utilizing multiple routes in a cooperative sensing Cognitive Radio Network"* in IEEE 15th Student Conference, Malaysia.

Personal Traits

- **Fast learner** as at some point during a training period, I self-studied flutter framework in relatively short period to finish the client part in the final project of the Specialized Programme on IoT at Noida, India.
- **Managed** students as a part of my work to fulfill their diploma project "smart parking system" and it was eligible to be presented at Cairo ICT technology fair.
- **Initiative** Initiated to kickstart a LoRa-based radio lab at workplace.
- **Curiosity** lead me to discover Sage which is a great framework that helped me fulfill final parts of my Master thesis.
- **Organizes** course contents and schedule as part of my work.

Publications

- Influence of relaying malicious node within cooperative sensing in cognitive radio network, Wireless Networks, Springer US M Fathy, A Tammam, A Saafan
  Feb 2018, Wireless Networks
- Mitigating the impact of malicious behavior via utilizing multiple routes in a cooperative sensing Cognitive Radio Network, IEEE 15th Student Conference M Fathy, A Tammam, A Saafan
  Dec 2017, IEEE Xplore

Created Tutorials

- WebAssembly to run blockchain using Go - Codementor
- Ethereum dapps - youtube
- Solidity for Smart Contracts on Ethereum - youtube

Certificates

Udacity **Nanodegree** **JUN 2020**
- Blockchain Developer

VMware **NTI** **DEC 2019**
- VMware vSphere 6.7 Foundations

British Council **English Test** **Oct 2019**
- IELTS Score - 7.5

CDAC **Noida, India** **APR 2019**
- Specialized Programme on IoT

Coursera **University of Michigan** **APR 2019**
- Applied Data Science with Python

Coursera **deeplearning.ai** **JUL 2018**
- Deep Learning Specialization

Coursera **IBM** **FEB 2018**
- A developer's guide to the Internet of Things (IoT)

Cairo University **IBM** **MAY 2017**
- Cloud Application Developer - Mastery Award for Students 2016

Cairo University **IBM** **MAY 2017**
- Cloud Application Developer - Explorer Award for Students 2016

ETS **Reasoning Test** **Sep 2014**
- GRE Analytical Score - 163 *out of* 170

ETS **English Test** **Dec 2012**
- TOEFL Score - 96 *out of* 120

Amit Learning **Mobile Application** **Summer 2011**
- iPhone App development using Objective-C

Ain Shams University **Mentor Graphics** **Summer 2010**
- VHDL Digital Design Course - by Dr. Watheq El-Kharashi

Software Developer Foundation

- Understanding is built on a solid foundation i.e. Data Structures, Algorithms, Computer Architecture and Theory of Computation gained from Academic Study.
- Basic knowledge about different Software design patterns.
- Hands-on experience on state management design patterns using Redux, Scoped Model and Business Logic Component (BLoC) pattern.
- Hands-on experience on abstract factory pattern using BuiltValue library provided for Dart and ObjectFactory provided for C++ by Ns-3 toolkit.
- Hands-on experience on singleton design pattern in Angular JS and Laravel.

Research Interests

IoT Security

IoT security is the topic of interest; since I am intrigued about combining IoT with blockchains to achieve one of the aspects of security.

Reinforcement Learning

Reinforcement Learning is the topic which gets my attention within the umbrella of Machine Learning as optimizing different engineering applications using Reinforcement Learning is a technique which I think I might need to utilize in upcoming research.

Blockchain

Forensic blockchain is one interesting research topic that is still a hot topic and it will definitely quench my passion towards Cryptography.

Hobbies

Fitness	**Latin Dancing**	**Football**	**Movies**	**Documentaries**	**Comics**

References

Prof. Mohsen M. Tantawy — **mohsen.tantawy@nti.sci.eg** — **Google Scholar**
National Telecommunication Institute

Dr. Emad Abd-Elrahman — **emad.abdelrahman@nti.sci.eg** — **Google Scholar**
National Telecommunication Institute

Dr. Asmaa M. Saafan — **asmaa.saafan@nti.sci.eg** — **Google Scholar**
National Telecommunication Institute