**ZEINAB MOHAMED**

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**EDUCATION**

Bachelor’s degree in Electrical, Electronics and Communication Engineering.

**Cairo University**  **Grade: Very good**

� graduation year: 2021

**GRADUATION PROJECT**

Oct.2020 - July.2021   
Under supervision of Dr/.Mohamed Khairy, and mentored by Smartec-Group.

**Capacity Optimization for cellular network in (3G, 4G) using Machine Learning Algorithms**

• **Description:**  
The objective in this project is to develop a method to detect the problems of cellular network in (3G, 4G) like [ the overshooting, the high utilization, the blocking in (UL, DL), low average quality, high service drop rate, overload congestion in (cell, RNC), high CCEusage ] by monitoring the values of **HUAWEI Vendor Counters** using data analysis concepts with python for KPIs analysis and Machine Learning [Sklearn, Matplotlib, Mpl-toolkits, Pandas, Numpy].

Then recommend solutions for each of these problems to increase capacity of 4G and 3G cellular networks.

• **Grade:**  
 Excellent.

**OTHER PROJECTS**

**Communications Based Projects**

• MATLAB simulation of OFDM system, 2020.

• MATLAB simulation of channel support **DAMPS and AMPS** to compute the blocking probability, 2020.

• MATLAB simulation for diﬀerent digital modulation techniques ( BPSK, QPSK, 16-QAM, 16-ASK ), 2020.

• LTE Planning containing Coverage dimensioning and Capacity dimensioning using ATOLL, 2020.

**INTERNSHIPS**

**Trainee at Mega Academy|Aug-Sep 2020.**

• GSM, GPRS, EDGE, CDMA, UMTS, HSPA, LTE and LTE-A.

• Drive Test and LTE planning (Atoll).

**Trainee at KMT for industrial services|July 2019.**

• programmable logic controller.

• Integrated condition monitoring.

**IT Engineer Trainee at E-GAS Company|Aug 2018.**

• Concept of Network and Types of them.

• Communication protocols in Network and protocol layers (OSI).

• Internet application protocols.

**TECHNICAL SKILLS**

• Machine learning frameworks like Keras, Pytorch, Tensorﬂow and Sklearn.

• Data science and Data analysis.

• Data structures, algorithms and OOP.

• Full Mobile Package.

• LTE air interface Huawei training.

• Cellular Network Optimization & improvement.

• Drive test result analysis & Planning with Atoll.

• 5G Huawei training.

• CCNA 200-301 training.

**PROGRAMMING**

C++/C python SQL

**TOOLS**  
 Anaconda Visual Studio Excel Atoll

• MATLAB simulation of a super-heterodyne receiver, 2019. Multisim Protcus Cadence

**Programming Based Projects**

• Python, Model (Bert) a real-time streaming sentiment analysis using Spark for English comments in Twitter including keywords, 2021.

• Python, Train Convolutional Neural Networks (Face Recognition), Recurrent Neural Networks and improving their Hyperparameter Tuning, 2020.

• C++ Program that implements a simple version of in-order delivery packets in many networking protocols and applications using Circular Buﬀer, 2019.

**Electronics Based Projects**

• Universal Biquadratic Active Filter and design an Opamp-RC Band pass Filter simulation on Cadence Virtuoso,2019.

• Simple Arithmetic Logic Unit (ALU) IC’s based and implemented on PCB, 2018.

**VISUALIZATION,ANALYSIS**

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| MATLAB | Matplotlib | | Mpl-toolkits |
| Pandas | Numpy | Tableau | |

**PERSONAL SKILLS**  
 Hard-working Self motivated Self learner

Working under stress Strong team player

**LANGUAGES**

**Arabic:** Native.

**English:** Very good.