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**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 CCE- usage ] 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 di erent digital modulation techniques ( BPSK, QPSK, 16-QAM, 16-ASK ), 2020.
* LTE Planning containing Coverage dimensioning and Capacity dimensioning using ATOLL, 2020.
* MATLAB simulation of a super-heterodyne receiver, 2019. **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 Bu er, 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.

**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, Tensor ow 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 Multisim Protcus Cadence

**VISUALIZATION,ANALYSIS**



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.