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**College of Engineering**

**Electrical and Computer Engineering Department**

**Practical Training (040X-490)**

**Practical Training Final Report**

**Fall 2018 -2019**

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Training Organization Name: University of Sharjah

Training period: 07/06/2020 to 16/07/2020

Academic Supervisor Name: Dr. Anwar Hasan Jarndal

Sharjah University is an extensive academic body with a distinctive style of learning and a global vision. It is a pioneer as a university in science, and arts research in the UAE and the GCC region. Department of Electrical and Computer Engineering offers undergraduate programs in electrical and electronic engineering. The Engineering Accreditation Commission of ABET accredits the department. Under the supervision of Professor Anwar Hasan Jarndal, I conducted my training as a research assistant. I aided in developing three research papers, two conference papers, and one journal paper. At the start of the training program, I learned about artificial intelligence and machine learning, about the types and how it works. In addition, the algorithm used to develop such models and the math behind them. Mainly four algorithms were studied extensively to allow me to develop any model to achieve any goals.

Furthermore, the very first model I developed was used to describe IV characteristics of a new transistor type. The Gallium Nitride (GaN) high-electron-mobility transistor (HEMT), it's a new type of transistor that has a wide bandgap, high thermal conductivity, high breakdown voltage, high electron mobility, low parasitic capacitance, low turn on resistance and high cut off frequencies which makes it a good choice to use in a power amplifier. Since I learned about transistors in depth previously in my studies, mainly in the following courses: fundamental of electronics, electronics, VLSI, and Solar PV systems. This allowed me to develop a model that can be used to describe the transistor's behavior not only due to a different gate and drain voltages but also includes the temperature effect. Moreover, the output is very accurate, and the model is simple and is very resource-efficient. Also, since I learned how to use MATLAB throughout my studies it was my platform of choice to create all the model.

For the second and third papers, the task was to develop a prediction model of the number of death due to COVID-19. The model developed mainly considered the condition of the affected cases such as elderly patients, smokers, and diabetic patients. Developing such a model was more challenging because it is my first time learning about disease prediction models. Additionally, I learned how to acquire trusted datasets to work on. And Data analysis techniques such as pre-processing the data and detecting outliers points, to help improve the accuracy of the model.

During the internship, I learned a lot from the professor; it added more skills to my arsenal that are beneficial in the market. I learned about Python language, which is very powerful and can be used to develop almost anything, ranging from apps to websites to artificial intelligence. In addition to improving my research and writing skills. This experience was very fruitful to me, and I would recommend it any student who is passionate about learning and developing himself.