

# BAHA RABABAH

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Enthusiastic and dedicated master computer science and engineering with two master degrees and with experience in machine learning, data engineering, programming, and Internet of Things. 3+ years of machine learning and data analysis experience, involved building and testing 50+ high quality projects.

**Keywords:** Machine Learning, Data Science, Blockchain, Python, TensorFlow, NumPy, Scikit-learn, Keras, Pandas, Matplotlib, Node-Red, JSON , Java, Object-Oriented Programming, Data Structure, Java Script, PHP, and C++.

## TECHNICAL SKILLS:

- **Programming:** Python, Java, C++
- **Visual Programming:** Node-Red
- **Frameworks:** TensorFlow, Keras, Scikit-learn
- **Database Management:** MySQL
- **Front-End Development:** PHP, JavaScript, HTML5, CSS3
- **Project management & version control tools:** Git
- **Design Architectures:** Object-Oriented Design
- **Cloud platforms:** OpenStack , IBM cloud
- **IDE:** *PyCharm*, Colab, Visual Studio, *NetBeans*
- **Operating Systems:** Windows, Linux, Raspberry Pi OS

## PROJECTS:

- **Distributed Intelligence Smart Home Application** ( March 2020 – April 2021):  
**Summary:** Efficiently devised and implemented IoT based smart home application that manages home's appliances based on hybrid edge and cloud computing for data processing, computing and controlling.  
**Languages, Tools, and Techniques:** Node-Red, JSON, Java Script, Raspberry Pi, IBM cloud, ETL, Deep Neural Networks, Python, NumPy, Pandas, Keras, Matplotlib.
- **Audio Emotion Recognition** (March 2021- May 2021):  
**Summary:** Implemented a logistic regression model that is able to predict answers of ten types of users in classifying the emotional sounds audios (happy, sad, angry, etc.).  
**Languages, Tools, and Techniques:** Python, NumPy, Pandas, Scikit-learn, logistic regression, Pickle.
- **Pepper Diseases Detection** ( Jan 2021 – March 2021):

**Summary:** Developed a warning tool that performs pepper disease detection using leaves images of healthy and infected pepper plants.

**Languages, Tools, and Techniques:** Python, Image processing, NumPy, Pandas, Keras, CNN, Data Visualization, Matplotlib.

- **Early Warning Model for COVID-19** ( May 2020 – June 2020)

**Summary:** Built a machine learning model that is able to forecast the number of death of COVID-19 in closed area such as ships. It helps public health officials to understand disease severity and how to intervene.

**Languages, Tools, and Techniques:** Python, NumPy, Pandas, Scikit-learn, Data Visualization, matplotlib, Feature Selection.

- **Anomaly Detection Model of IoT Botnet Attacks** ( March 2020 – May 2020):

**Summary:** Built anomaly detection model that is able to accurately and instantly detect launched IoT Botnet attacks from compromised IoT devices using multi-layer perceptron neural network (MLPNN).

**Languages, tools, and techniques:** Python, NumPy, Pandas, Keras, MLPNN, Feature Selection.

- **Bitcoin Blockchain Data Analysis** (Sep 2019 – Dec 2019):

**Summary:** Was a member of team (29 developers) who developed tools and techniques in fast-Paced agile environment to analyze large volume of Bitcoin Blockchain users' data in order to get meaningful insights. I implemented techniques that cluster Bitcoin's users based on behavior patterns such as change address, common spending, and transitive closure.

**Languages, Tools, and Techniques:** Python, NumPy, Pandas, Clustering, Matplotlib, Data Collection, data cleaning.

- **House Price Prediction**( Feb 2018 – March 2018)

**Summary:** Developed a machine learning model that aids buyers in their search to secure their dream *home*. It is effectively able to predict the price of a house based on certain variables such as bedrooms, bathrooms, View, waterfront, etc.

**Languages, Tools, and Techniques:** Python, NumPy, Pandas, Scikit-learn, Linear Regression, Data Visualization, matplotlib, Feature Selection.

## **EDUCATION AND QUALIFICATIONS:**

- University of Manitoba, Canada. Sep 2018 – April 2021  
MSc Computer Science.  
**Thesis Domain:** Internet of Things and Machine Learning
- University of Portsmouth, United Kingdom. Sep 2014 – Sep 2015  
MSc Computer Network Administration and Management
- Al-Balqa Applied University, Jordan. Sep 2006 – July 2010  
BSc Computer Engineering.

## **RELEVANT EXPERIENCE:**

### **Machine learning Engineer Freelancer**

**Feb 2018 – Present**

- Developed 50+ machine learning projects.
- Analyzed several public and private datasets (NSL-KDD, N-Balot, Cruise Ship, PlantVillage, etc.).
- Implemented machine learning and deep learning algorithms using Python.
- Used data science and machine learning libraries (NumPy, Pandas, Scikit-learn, Keras, matplotlib).

### **Full Time Lecturer, Islamic University of Madinah, KSA**

**Sep 2016 –Sep 2018**

- Designed courses, prepared teaching materials, delivered lectures, and conducted lab and tutorials.
- Made improvements to existing Lab experiments and exercises.
- Contributed to ABET accreditation of the IT academic programs.
- Evaluated and developed the faculty policy by engaging three committees (Strategic Planning Committee, Faculty Affairs Committee, and Curriculum Committee).

### **Lecturer of Information Technology, Arabian Education and Training Group, Jordan**

**Sep 2015 –Sep 2016**

- Prepared and delivered lectures, tutorials and workshops.
- Prepared and marked assignments and exams.
- Responded to student inquiries.

### **Computer Helpdesk and Data Entry Operator, Ministry of interior, Bahrain**

**Jan 2012 – Aug 2014**

- Provided support on hardware and software (Desktops, Printers, Windows, Oracle Human Resources).
- Resolved problems with networks.
- Responded to queries via email or phone.

## **HONOURS & AWARDS:**

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|---|------------|
| • Program completion scholarship, University of Manitoba                  | April 2021 |
| • Honorable achievement ABET accreditation, Islamic University in Madinah | May 2018   |
| • Best student certificate, University of Portsmouth                      | Nov 2015   |
| • Best performance certificate, University of Portsmouth                  | Nov 2015   |

## **PUBLICATIONS:**

- **Baha Rababah**, Rasit Eskicioglu "Distributed Intelligence Model for IoT Applications Based on Neural Networks", International Journal of Computer Network and Information Security(IJCNIS), Accepted.
- Tanweer Alam, **Baha Rababah**, Arshad Ali, Shamimul Qamar "Distributed Intelligence at the Edge on IoT Networks", Annals of Emerging Technologies in Computing (AETiC), Vol.4, No.5, pp. 1-18, 2020.
- **Baha Rababah**, Tanweer Alam, Rasit Eskicioglu "The Next Generation Internet of Things Architecture Towards Distributed Intelligence: Reviews, Applications, and Research Challenges", Journal of Telecommunication, Electronic and Computer Engineering (JTEC), Vol.12, No.2, pp. 11-19, 2020.

- Tanweer Alam, **Baha Rababah** "Convergence of MANET in communication among smart devices in IoT", International Journal of Wireless and Microwave Technologies (IJWMT), Vol.9, No.2, pp. 1-10, 2019.
- **Baha Rababah**, Shikun Zhou, Mansour Bader," Evaluation the Performance of DMZ", International Journal of Wireless and Microwave Technologies(IJWMT), Vol.8, No.1, pp. 1-13, 2018.
- Mansour Bader, Andraws Swidan, Mazin Al-hadidi and **Baha Rababah** "A Binary to Residue Conversion Using New Proposed Non-Coprime Moduli Set" Signal & Image Processing : An International Journal (SIPIJ), Vol.7, No.3, June 2016.