Assignment #4

Herewith is your assignment for this week. It is due by next lecture We need to discuss your progress Wednesday evening

**Assignment objective :** to familiarize you with various methods proposed in recent literature for IOT network performance optimization thorough analysis of certain design factors and requirements. Major factors discussed may include Reliability , scalability or energy efficiency. You will also review various suggested solutions implemented at different layers of IOT Architecture , to achieve the optimization of IOT performance

**Research Plan :**  The papers cover the following subjects:

* An IOT & sensor networks performance optimization research subject ( IOT reliability , IOT energy efficiency , scalability , security , ….etc )
* Application of various Algorithm for solving the chosen networking optimization problem .

**Assignment Tasks** :Do the following in order :

**Group A**

1. Read the paper titled (**Energy and time efficient task offloading and resource allocation**

**on the generic IoT-fog-cloud architecture)**

This paper gives you an example how the energy and time efficient computation for tasks offloading and resource allocation for IoT -fog architecture is formulated into the energy and time cost minimization problem

1. Read the paper titled ( **Energy Efficient and Reliable Transport of Data in**

**Cloud-Based IoT**) This paper research shows several strategies to ensure energy efficiency and reliability for transport of data , that can be implemented in the IoT-cloud system

1. Read the paper titled (**Energy efficient fog computing for 6G enabled massive IoT: Recent trends and future opportunities**) This help you see the overall application of different energy-efficient fog computing solutions for fog computing in the future 6G massive IoT network
2. Read the paper titled (**Performance, Reliability and Scalability for IoT**) This paper discuss the most important problem of QoS optimization, which lays in Performance, Reliability and **"Big Data"** Scalability for IoT . Some advanced approaches for optimization of Performance, Reliability and Scalability are offered .
3. Read the paper titled (**New Frontiers in IoT: Networking, Systems, Reliability, and Security Challenges**) This paper **discuss the unique challenges for reliability, security, and privacy posed by IoT systems due to their salient characteristics which include heterogeneity of devices and protocols, dependence on the physical environment,**
4. Read the paper titled( **A Survey on Architecture, Protocols and Challenges in IoT ) This paper surveyed various architecture and protocols used in IoT systems and proposed suitable taxonomies for classifying them**

**Assignment duties**

* Your assignment is to write a report of two sections for **two papers** selected from the above papers. The report is considered a literature review & summary for **each paper selected of the papers 1-6 of the** list above . The report should covers **in short** : Summary Review of each article , type and methodology of the research work done in the article , the results concluded by the article , and Submit a short critique of the required readings. The critique should be about three pages report **with a PPT file** that summarizes the reviewed paper. The report should roughly cover the main points of the paper and a critical assessment of the work that has been done. (i.e the strengths and weaknesses of the article ) . At the end of the report Write **a detailed summary** with title **Suggestion of a future research topic** that suggest a topic that you may consider a potential future work in the area **as concluded from reviewing these papers** . You may add to this also previous topics considered as future research topic on Assignment II.
* You may Search google scholar for recent papers on IOT network reliability & Security and scalability and include the search results on your report at the reference section
* **Note : The** aim of this assignment & previous one is to get acquainted with  **research topic** of IOT extracted from a large number of papers published in recent literature