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**Topic: Evaluation of Machine Learning Models for Parameter Prediction in Wireless Sensor Networks**

**Description:** Wireless Sensor Networks (WSNs) are backbone for monitoring and collecting data from multiple sensors in Cyber-Physical Systems (CPS). Data from WSN are applied in many different applications such as Smart Homes and Building, Smart City, Smart Transportation, Agriculture, E-Health. On the other hand, Machine Learning (ML), a field of Artificial Intelligence, is playing a key role in extracting crucial information from the big data collected by WSNs. However, there are several state-of-the-art ML algorithms which perform differently on different types of datasets. In this context, a study needs to be conducted to evaluate the performance of different ML models on a WSN dataset.

**Objectives**: A Master project within this topic would explore the following objectives.

1. First, an exploratory data analysis will be conducted on an Intel lab dataset. Intel lab dataset is a public dataset which consists of measurements of Humidity, Temperature, Light Intensity and Voltage from 54 sensor nodes placed in an area. More details can be found at (http://db.csail.mit.edu/labdata/labdata.html).

2. Next, some ML models will be applied to predict some parameters in the dataset.

3. The performance of existing ML models will be compared and a conclusion on these ML models will be made.

4. The results will be disseminated in reputed research articles or a part of a solid master thesis.

**Tools required:** Basic statistical knowledge, a programming language (preferably Python).

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