**MCSE 666: Assignment 03**

**Roll: MCE 079 05536 Name: Shyed Shahriar Housaini**

Q1. List several (Minimum 05) informative Research Articles and News Articles on your interested Pattern Recognition application domain.

Answer:

Article 1: [***Variable Frequency Room Air Conditioner Operation Pattern Recognition and Data Mining***](https://www.mendeley.com/catalogue/4e163fa5-6174-3d42-b7de-75f1ea25a225)

Zhihao Liang, Jianghong Wu, Zili Xie. *Jixie Gongcheng Xuebao/Journal of Mechanical Engineering (2019)*

Article 2: [***Anomaly detection based on machine learning in IoT-based vertical plant wall for indoor climate control***](https://www.mendeley.com/catalogue/915cbb70-edfa-3882-b8ae-fe3634d9d123)

Yu Liu, Zhibo Pang, Shaofang Gong *Building and Environment (2020)*

Article 3: [***Machine Learning Techniques for Increasing Efficiency of the Robot’s Sensor and Control Information Processing***](https://www.mendeley.com/catalogue/de642397-f46e-3ccd-a529-8270412a4f6b)

Yuriy Kondratenko, Igor Atamanyuk, Stanislav Sichevskyi *Sensors (2022)*

*Article 4:* [***Smart Solution to Improve Water-energy Nexus for Water Supply Systems***](https://www.mendeley.com/catalogue/5bd5a461-301d-3140-b052-88bcd98c5c00)

Jorge Helmbrecht, Jordi Pastor, Carolina Moya, *Procedia Engineering (2017)*

*Article 5:* [***Novel pattern recognition-enhanced sensor fault detection and diagnosis for chiller plant***](https://www.mendeley.com/catalogue/c3e64cd3-7ee6-3e36-9958-4fa50307d084)

X. J. Luo, K. F. Fong, *Energy and Buildings (2020)*

References of Sources: Mendeley Reverence Manager.

Q2. List several tasks from your Service/Official activities where Pattern Recognition (PR) is applicable? Briefly describe the tasks and justify why you think PR is applicable.

Answer:

Task1: Signature Recognition, Document- Letter / Communication pattern recognition, detect the pattern of different type of documentation required in various situations.

Justification:  Detecting the authenticity of documents, detecting the communication requirements of different projects, different official methods used in different situations, different patterns an types of laws applied in different situations.

Task2: Fault pattern detection, Work Estimation, Budgeting - Planning etc

Justification: Detect the type and reason or interruption by pattern of faults and failures in various machinery, detect the time pattern when repair and maintenance is required, pattern of cost estimation, repair time estimation etc.

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