CIND 820: Big Data Analytics Project
Section: DAH

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ABSTRACT

Demand Forecasting is the important area for business and country alike. Energy demand is increasing due to increase in technological advancement. It is a need of time to tackle climate with machine learning (David Et Al.). Therefore, for this project the dataset that is chosen is

" Hourly energy demand generation and weather" (Kaggle). Dataset is taken from kaggle and it contains 35064 rows and 29 columns. The dataset have 4 years of electrical consumption, generation, pricing and weather data for spain. The data is retrieved from (Entsoe, Esios and Openweather). The links are given in references. The dataset have hourly data for electrical consumption and respective forecast by Transmission Service Opersator (TSO) such as Spanish esios Red Electric Espana (REE) for consumption and pricing.

The problem being considered for the project is to predict or forecast energy demand accurately in Spain. The research questions considered for this project are: 1. Which regression technique will accurately forecast the daily energy consumption demand using hourly period ? 2. How to accurately forecast energy demand 24 hour in advance compared to TSO? 3. Using classification, determine what weather measurement and cities influence most the electric demand, prices, and generation capacity? The tools that will be used are Python weka, Tableau, R, Excel and others as needed.

The systematic data analysis process approach will be used for the project. After data selection, initial analysis will be carried out followed by the exploratory analysis (EDA). Then experimental design and model building will be carried out. Finally performance evaluation will be done together with recommendations and conclusion.

REFRENCES

David Et Al. retrieved from https://arxiv.org/abs/1906.05433

Kaggle retrieved from

https://www.kaggle.com/datasets/nicholasjhana/energy-consumption-generation-prices-and-weather

Entsoe retrieved from https://transparency.entsoe.eu/dashboard/show

Esios retreived from https://www.esios.ree.es/en/market-and-prices?date=19-05-2023

Openweather retrieved from https://openweathermap.org/api