

LITERATURE SURVEY

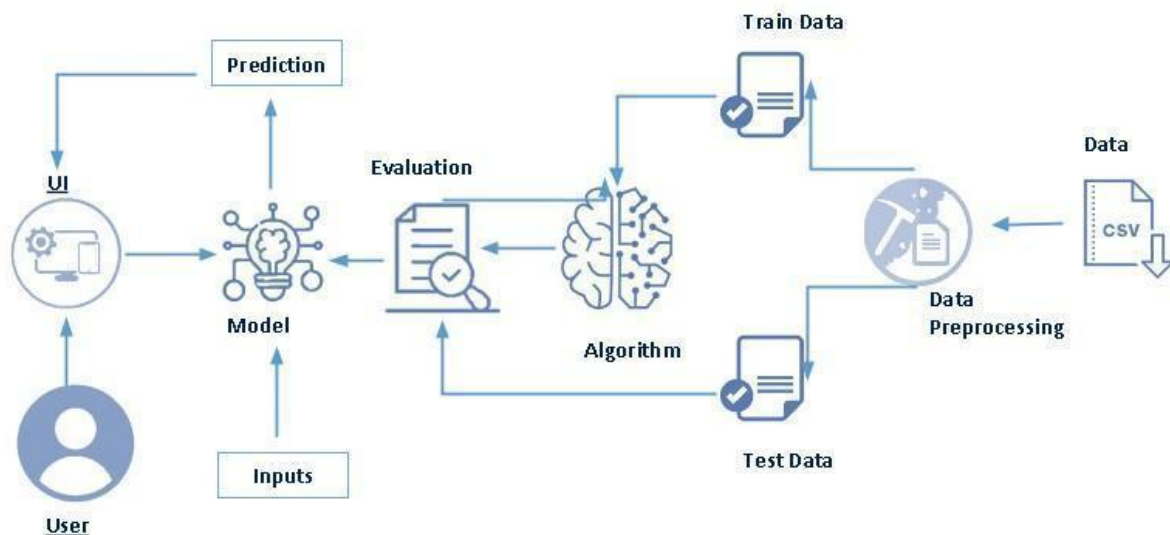
PROJECT SYNOPSIS:-

Power consumption analysis for households is an ML project that involves using machine-learning algorithms to analyse and predict the energy consumption patterns of residential buildings. The goal of this project is to help homeowners and utility companies better manage their energy usage, reduce waste, and lower costs.

The project involves collecting data on energy consumption and related factors such as weather, time of day, and occupancy. This data is then used to train machine-learning models to make accurate predictions of future energy consumption based on these factors. The models can be used to identify patterns in energy usage and make recommendations for ways to reduce energy waste and improve efficiency.

Overall, power consumption analysis for households is an important application of machine learning that has the potential to make a significant impact on energy usage and sustainability.

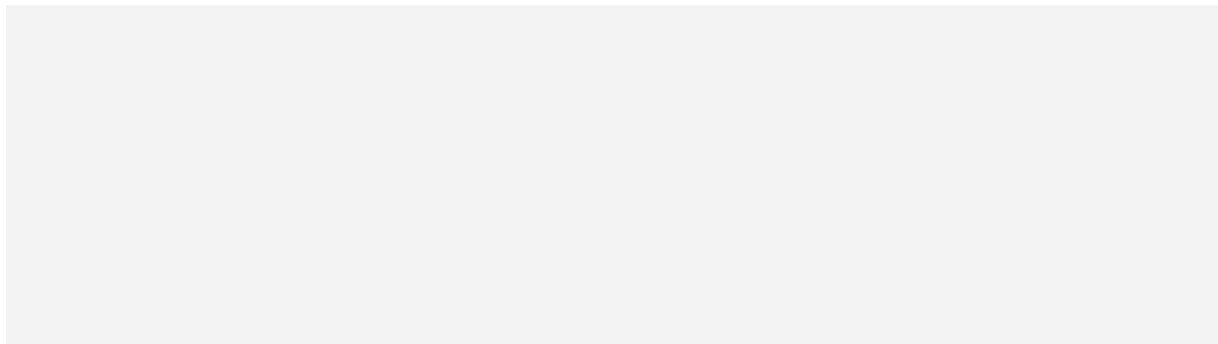
TECHNICAL ARCHITECTURE:



SURVEY:-

SOURCE	PUBLISHED DATE	ACQUIRED INSIGHT
<u>Front Big Data.</u>	Published online 2022 Sep 20. doi: 10.3389/fdata.2022.972206	With the UK-DALE dataset showed that, the FHMM algorithm yields better results in disaggregating raw power meter data into appliance-level energy consumption. Then, using association rules and sequential pattern mining , we describe our clustering-based data engineering method for generating energy consumption profiles in households from fine-grained observations, which are then utilized to build appliance usage patterns.
<u>Science Direct</u>	Volume 60, Issue 1, February 2021	Although the VRV system is well known to be an energy-efficient system, the unavailability of control measurement had caused excessive consumption for R&D building. The effect from the absence detector installed which helps to automatically turn off the lights in the respective rooms.
<u>Improvement of Industrial Energy Efficiency</u>	Published: 23 June 2022	A household can generate significant levels of GHG (greenhouse gas) emissions through the consumption of energy, goods, and services Purchasing energy-efficient products with less environmental impact are considered sustainable or green consumption Consumer energy-efficient products include: hybrid electric vehicles air-conditioning appliances, e.g., heaters, fans, humidifiers white brown goods

<u>Scientific Research Publication s</u>	Ibrik - 2019	<p>It was found that the most influence saving activities considerably decreased energy consumption in households and other commercial sectors are the use of high efficient appliances “category A of appliances”. Such activities are saving power demand, saving energy consumption and these appliances account for reduced energy bills in different sectors as well as having long operating hours</p>
<u>MDPI</u>	Published: 29 December 2020	<p>This section reports the partial least squares structural equation model (PLS-SEM), which was performed to test the conceptual model using both SPSS and SmartPLS 3.0 The results of this study show significant differences in purchasing intention due to differences in demographic characteristics such as gender, age, education, and income level.</p>



The first fuel of a sustainable global energy system:-

- 1) Two proposals are made.
 - a) One is to **retain** what is currently effective.
 - b) A new one is proposed to assist and to encourage the effective application to optimise the **efficient use** of **resources**.
- 2) The input energy to meet this requirement can be provided by **electricity**
- 3) Energy **consumption** is an essential element in development.
- 4) More efficient use of energy at all stages of the **supply/demand chain** could reduce **the negative impacts** of energy consumption, while still allowing the same economic development.
- 5) Major losses occur in all sectors of the economy from the use of old and inefficient technologies or **outdated** processes.