**DOCUMENT:MEASURE ENERGY CONSUMPTION**

**INNOVATE TECHNIQUES SUCH AS ENSEMBLE METHOD:**

The most popular ensemble methods are boosting, bagging, and stacking. Ensemble methods are ideal for regression and classification, where they reduce bias and variance to boost the accuracy of models.

**DEEP LEARNIN ARCHITECTURE:**

Deep-learning architectures such as deep neural networks, deep belief networks, deep reinforcement learning, recurrent neural networks, convolutional neural networks and transformers have been applied to fields including computer vision, speech recognition, natural language processing, machine translation.

**TO IMPROVE THE PREDRCTION SYSTEM ACCURACY:**

Linear Regression: Linear regression is perhaps one of the most well-known and well-understood algorithms in statistics and machine learning. Predictive modeling is primarily concerned with minimizing the error of a model or making the most accurate predictions possible, at the expense of explainability.

**TO IMPROVE THE ROBUSTNESS:**

A common ove model robustness is adversarial training which follows two steps-collecting adversarial examples by attacking a target model, and fine-tuning the model on the augmented dataset with these adversarial examples

**TIME SERISE ANALYSIS:**

Time series analysis is a specific way of analyzing a sequence of data points collected over an interval of time. In time series analysis, analysts record data points at consistent intervals over a set period of time rather than just recording the data points intermittently or randomly.

**MACHINE LEARNING MODELS**:

Factoring performance, accuracy, reliability and explainability, data scientists consider supervised, unsupervised, semi-supervised and reinforcement models to reach best outcomes.

**MACHINE LEARNING MODELS TO PREDICT FUTURE ENERGY CONSUMPTION PATTERNS:**

The five machine learning methods used are multi-layer perceptron (MLP), support vector machine (SVM), radial basis function (RBF) regressor, REPTree, and Gaussian process.