Machine Learning Model for Predict electricity consumption in Tierra del Fuego, Argentina.

The project focuses on building a Machine Learning model that can predict the total electricity consumption in Tierra del Fuego, Argentina. The model is trained on historical data from 2010 to 2024, including variables such as user type and time period. This prediction will help energy authorities and companies make more informed decisions about energy generation, purchase, or import. Four methodologies were tested—Linear Regression, Random Forest, XGBoost, and K-Nearest Neighbors—as candidate algorithms for the predictive model. After evaluating performance, Linear Regression emerged as the most accurate model, demonstrating high predictive capacity with a minimal error rate. These findings indicate that a linear approach may be particularly well-suited to this task, potentially simplifying the integration of the model into operational decision-making processes. The data collected was analyzed and pre-processed to ensure robust model training and testing.