

Comparison of Different Machine Learning Models for Time-Series Based Load Forecasting of Electric Vehicle Charging Stations

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Abstract : As the world looks towards a sustainable future, electric vehicles have become increasingly popular. Millions worldwide are looking to switch to Electric cars over the previously favored combustion engine-powered cars. This demand has seen an increase in Electric Vehicle Charging Stations. The big challenge is that the randomness of electrical energy makes it tough for these charging stations to provide an adequate amount of energy over a specific amount of time. Thus, it has become increasingly crucial to model these patterns and forecast the energy needs of power stations. This paper aims to analyze how different machine learning models perform on Electric Vehicle charging time-series data. The data set consists of authentic Electric Vehicle Data from the Netherlands. It has an overview of ten thousand transactions from public stations operated by EVnetNL.

Keywords : forecasting, smart grid, electric vehicle load forecasting, machine learning, time series forecasting

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