# Machine Learning Engineer Nanodegree

# Capstone Project Report

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# Definition

## Project Overview

Growing adoption of Electric Vehicles (EVs) means that electricity consumption for EV owners could cause dramatic and unpredictable shifts in electricity demand. Electric utilities are gathering and analyzing data on how the growing popularity of EVs could potentially stress the electric grid’s infrastructure and develop a better-informed investment strategy as a result.

## Problem Statement

This project will be approached as a supervised learning classification problem. The goal is to analyze Advanced Metering Infrastructure (AMI) data to classify which residences have electric vehicles. Furthermore, the goal is also to predict when, or classify time intervals, when EVs are being charged. The provided inputs are a training dataset of house ids with 30-minute energy readings in kWh, together with a labeled training dataset which denotes which houses are charging EVs during which time intervals with a 1 or a 0.

## Metrics

## Analysis

## Data Exploration

## Exploratory Visualization

## Algorithms and Techniques

## Benchmark

# Methodology

## Data Preprocessing

## Implementation

## Refinement

# Results

## Model Evaluation and Validation

## Justification

# Conclusion

## Free-form Visualization

## Reflection

## Improvement