Predicting Temperature using Polynomial Regression

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In my Temperature_monitoring_using_IOT repository you will find the required circuit connections, which is created and deployed to Bolt Cloud product to monitor the temperature in the room, and here we use that already collected monitored data to predict future values in the room.

The following parameters are required to predict the Future data they are as follows:

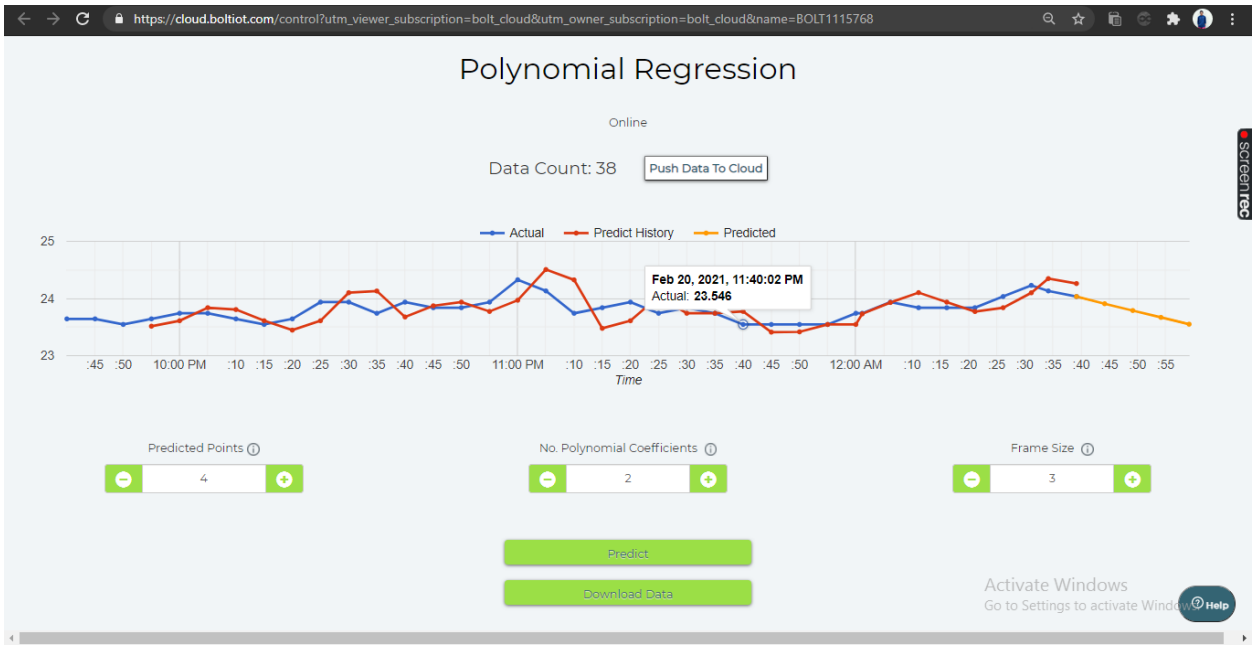
Prediction points: This number tells the Visualizer how many future data points need to be predicted. By default, the Visualizer spaces the points with the data collection time in the hardware configuration of the product. So if you set the product to collect data every 5 minutes, and select 6 prediction points, the Visualizer will predict the trend and show 6 points up to 30 minutes into the future.

No. Polynomial coefficients: Polynomial Visualizer processes the given input time-dependent data, and outputs the coefficients of the function of the form:

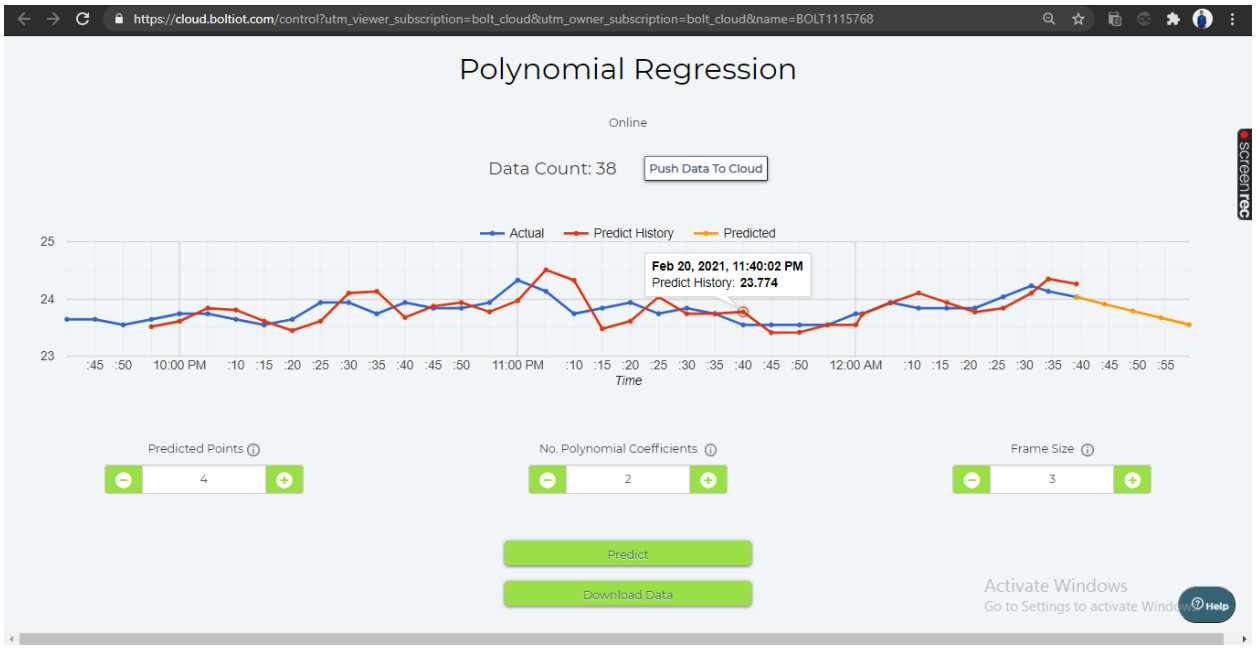
$$data(t) = (C_n * t^n) + (C_{n-1} * t^{n-1}) + (C_{n-2} * t^{n-2}) + \ldots\ldots + (C_1 * t^1) + C_0$$

This most closely resembles the trend in the input data. This number tells the Visualizer how many elements should be present in the function i.e. the value of n.

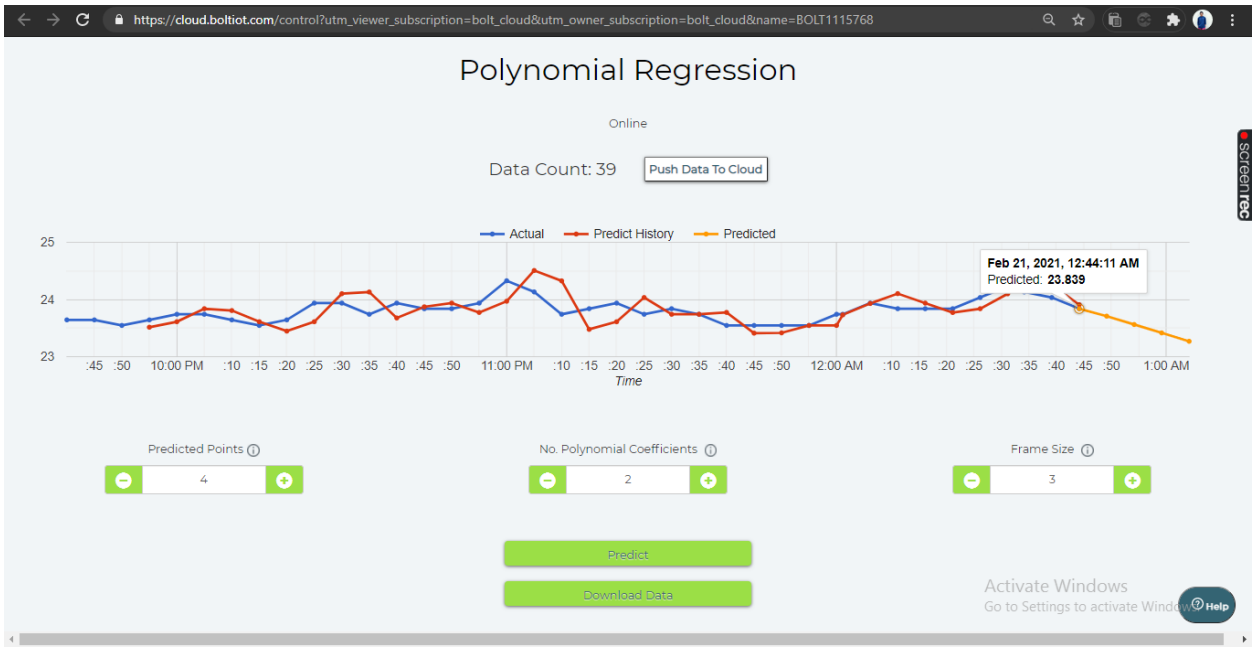
Frame Size: These are the number of previous data points the Visualizer will use to predict the trend of the data. For example, if you set this value to 5, the Visualizer will use the previous 5 points to predict the trend.



This is showing the Actual value at a particular time



This is showing the Predict History at a particular time



This is showing the Predicted values at Future points

When you click on the predict button 2 graphs other than the data graph shown. These graphs are the prediction history, and the predicted data.

The prediction history graph helps you tune the machine learning model. You have to change the parameters below, to make it so that this graph most closely resembles the actual data. When this happens the predicted data, or the predicted future temperature will be most accurate.