

Final Report

Chapter Goals:

- Learn what goes inside the project's final report, and how it should be presented

A. Creating the final report

After making the predictions on the testing dataset, we can create the final report for the project. The report contains all major parts of the project, including data analysis, model overview, and results from training, evaluation, and predictions. The best way to present the report is through a slideshow presentation, which allows us to convey results with meaningful visualizations (e.g. plots, charts, etc.). Each slide should have limited text.

The project report should focus more on the data and results, rather than the machine learning model. It's good to have an overview of the model's architecture, but avoid going too in-depth into how the model actually works. A short description of the model and diagram of the architecture should be enough.

To see what this project's report looks like, check out the presentation in the right-hand column of the screen.

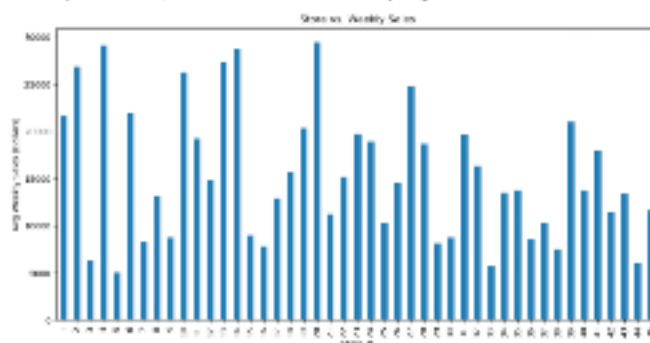
The Problem

- ▶ Sales forecasting: predicting weekly sales amounts
- ▶ Different departments across 45 stores
- ▶ Can we train a machine learning model to automatically make these sales predictions?

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The Dataset

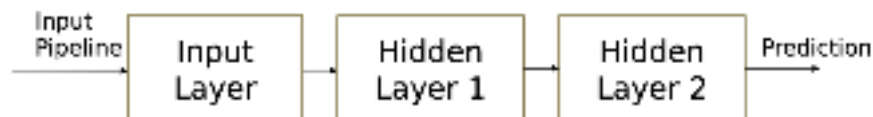
- ▶ Each data observation describes sales for a department of one store in a given week
- ▶ Helpful features in the dataset include store sizes, type of store, regional temperature, and national unemployment rate



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The Model

- ▶ Converted CSV data into TFRecords pipeline
- ▶ Trained a 2 hidden layer multilayer perceptron (MLP)



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Results

- ▶ Used mean absolute error (MAE) as training/evaluation metric
- ▶ Final evaluation MAE: 2873.11 (avg. \$2873 prediction error on evaluation set)
- ▶ Weekly sales can range up to \$70,000

SAMPLE
Store ID: 32
Department ID: 56
Start of Week: 4/12/2019
Holiday Week: No
Regional Temperature: 59.4 °F
Regional Fuel Price: \$3.71/gallon
CPI (Consumer Price Index): 223.03
Unemployment %: 6.21
Store Type: A
Store Size: 203,000 square feet
Predicted Sales: \$21,206.14

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