Blood & Money

Visualizing Measurement Deviations on Blood Diagnostic Machines

W205 Section 4 Final Project
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Business Problem

- Our client is a blood analyzer device manufacturer
- They have thousands of customers throughout the nation
- By federal law, every blood analyzer device must be regularly tested to ensure a baseline in measurements
- Incorrect measurements can lead to false positives
- How can we better detect measurement deviations?
- How can we improve predicting measurement failures?

Our approach

- We took raw csv from three aggregated client data sources:
  - Quality Control
  - Machine Raw
  - Sample Means
- Used Recurrent Neural Net with Tensorflow to build a predictive model
- And presented the data in two ways:
  - Tableau book to highlight statistical properties
  - Dynamic dashboard for visualizing outliers

Dataflow High-level

- Load raw csv

- Cleanse data
- Build model
- Push to database

- Visualize data
- Show outliers

Results

Bokeh Dashboard

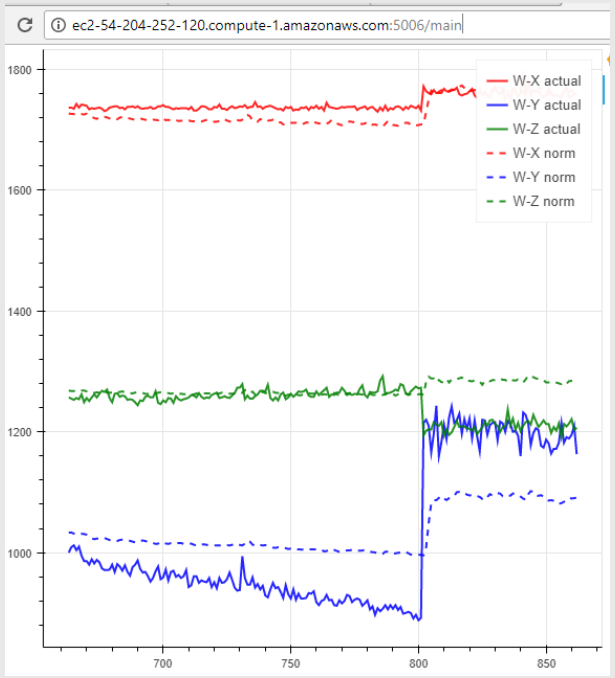

Tableau workbook

Future Expansions

- Decreasing the overhead costs for diagnosing failing devices
- Real time data ingestion, to complement the streaming visualization
- More efficient data transformations and modeling
- More robust architecture

Appendix: Dataflow Detailed