A lab measures the color of some treated samples for comparison to untreated. Example applications could be painted versus unpainted walls or dirty versus clean surfaces or measures of how a designer’s selected Pantone colors render on a surface. A medical or clinical example could be change in skin color because of a cosmetic or drug treatment.

A goal is for a research or analytics team to collaboratively compare these results with an expert panel where the experts grade how close the treated samples’ appearance is to the untreated control. Their work could hypothetically be to build a model predicting panel grades to the lab measurements.

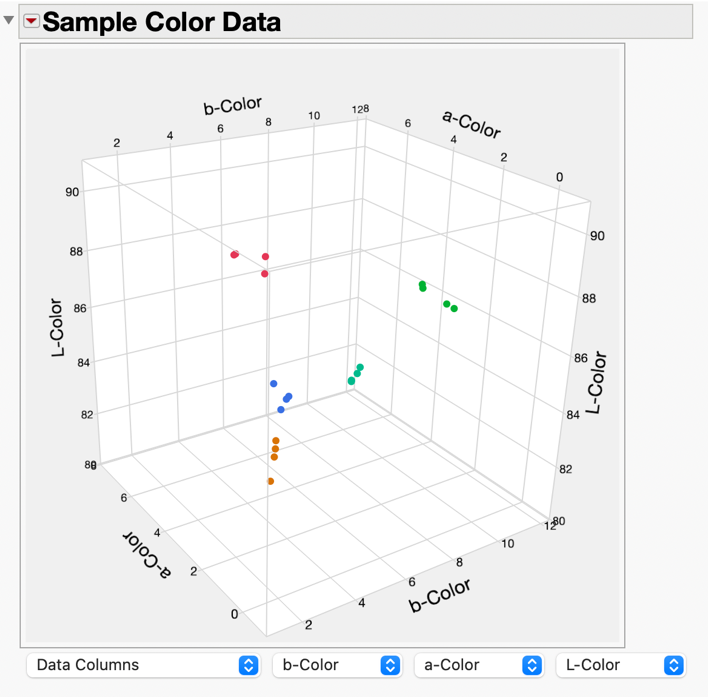
This [blog gives more background on color measurements and typical calculations](https://datadelveengineer.com/getting-color-right-in-products/) including the fact that measured colors are typically reported as three numbers called L\*, a\* and b\* colors reflecting the color’s lightness/darkness (L\*) and its hue (a\* and b\*). Some typical calculated measures are the DL, Da and Db between treated and untreated –along with a more holistic calculation called CMC DE that gives a measure of how visually different one color is from another.

The proposed (or possibly existing) data pipeline is shown in the block diagram.

A diagram of a data flow

Description automatically generated

The case study is in a color\_project folder, and example raw data are in the example\_data folder.

 A screenshot of a computer

Description automatically generated