

## About Dataset

### Context

This data was taken from an actual production line near Detroit, Michigan. The goal is to predict certain properties of the line's output from the various input data. The line is a high-speed, continuous manufacturing process with parallel and series stages.

### Content

The data comes from one production run spanning several hours. Liveline Technologies has a large quantity of this type of data from multiple production lines in various locations.

### Challenge

The data comes from a multi-stage continuous flow manufacturing process. In the first stage, Machines 1, 2, and 3 operate in parallel, and feed their outputs into a step that combines the flows. Output from the combiner is measured in 15 locations surrounding the outer surface of the material exiting the combiner.

Primary Goal: Predict measurements of output from first stage.

Next, the output flows into a second stage, where Machines 4 and 5 process in series. After Machine 5, measurements are made again in the same 15 locations surrounding the outer surface of the material exiting Machine 5.

Secondary Goal: Predict measurements of output from second stage.

### Acknowledgements

The Liveline team would like to thank all the technicians and production personnel who assisted with the runs and data collection.

### Inspiration

We are always looking for the best predictive modeling approaches to use in real time production environments. Models are employed for several use cases such as development of real time process

controllers (use the models in simulation environments) and anomaly detection (compare model predictions to actual outputs in real time).