ML FOR PREDICTIVE MAINTENANCE

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WHY

REDUCE ACCIDENTAL FAILURES

Accidental failures vs maintenance intervention

- Costs
- Downtime
- Safety

PROCESS INFORMATION

Analyzing machines data

- Future knowledge
- Hidden peculiarity

HOW

PRELIMINARY DATA ANALYSIS

- Polishing
- Exploration
- Estimate parameters

MACHINE LEARNING TECNIQUES

Neural networks for data forecasting

- Long short-term memory
- Convolutional neural networks

WHAT

DISCOVERIES FROM DATASET

- Link between failures and readings
- Autocorrelation

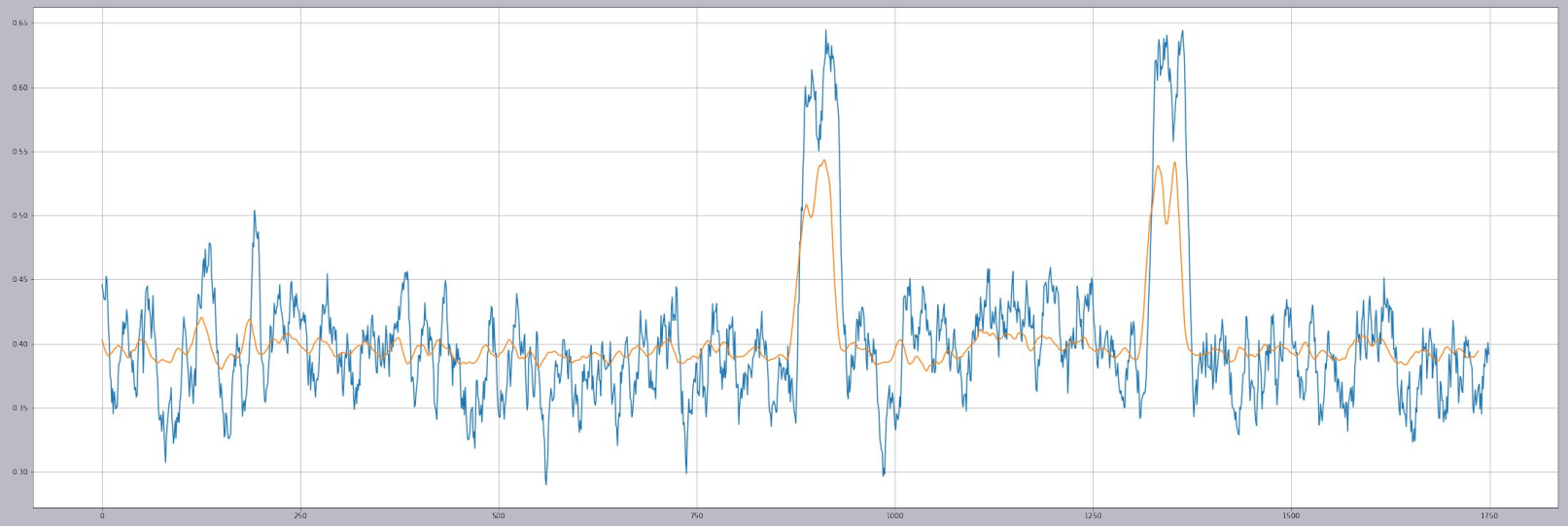
TRAINING AND TESTING

- Machine 1 failure 4
- 80/20 split
- 24 past data point

WHAT

LSTM RESULTS

0.01438 MSE (normalized data)



WHAT

CNN RESULTS

0.01478 MSE (normalized data)