



ICNAP Hackathon Task3

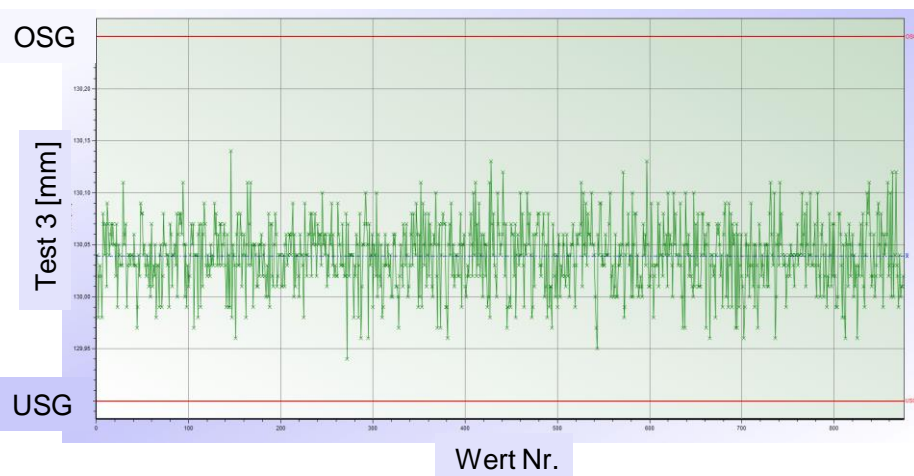
Task Description

ICNAP Hackathon, 25-27 October 2019
IconPro GmbH

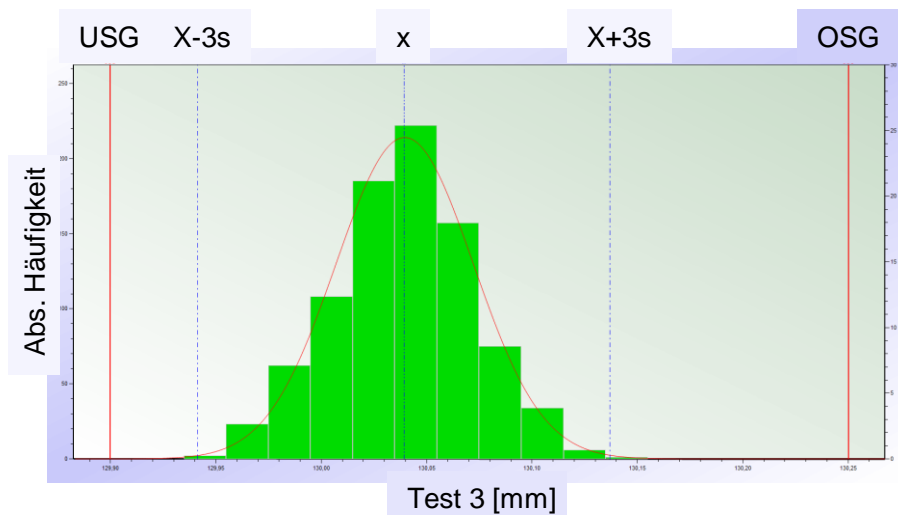
AI-based Process Monitoring

Evaluation of process capabilities

Process chart



Histogram

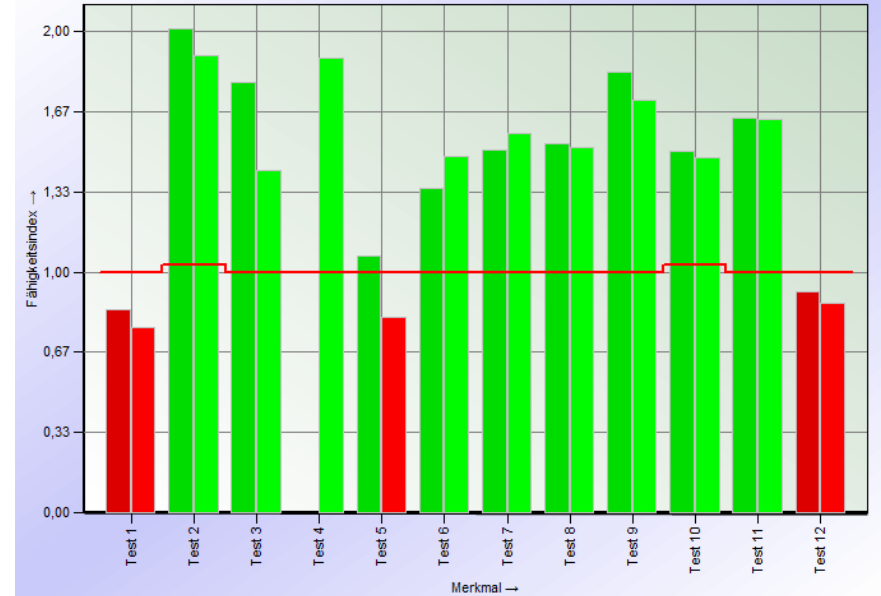


Evaluation of process capabilities

Characteristics – Parameter overview

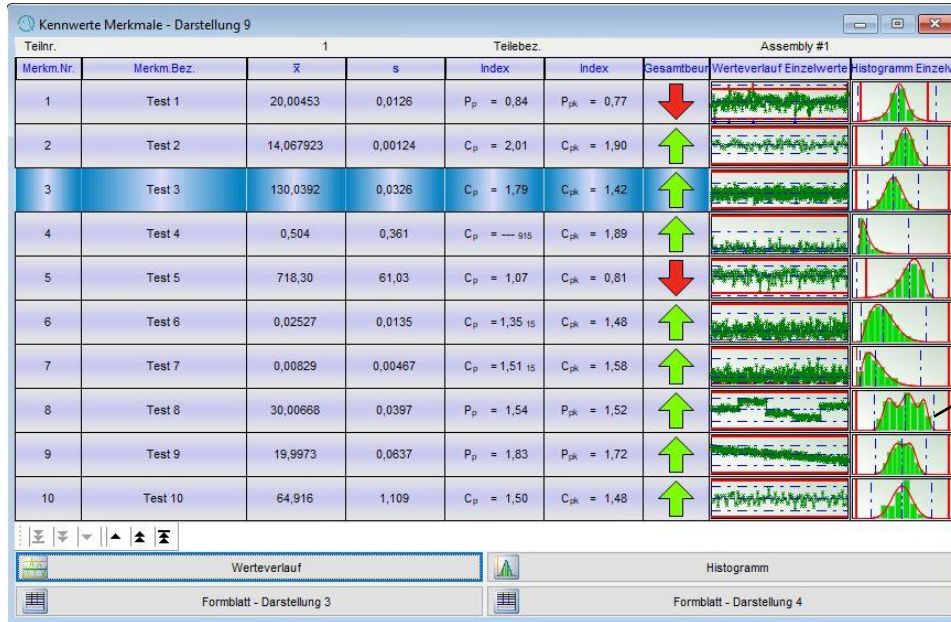


Characteristics - Capabilities



Evaluation of process capabilities

Characteristics – Parameter overview



Mixed Distribution



Task 3 – Mixed Distribution Analysis

Goal	<ul style="list-style-type: none">• To have central intelligence in production for monitoring and analyzing process parameters automatically• This hackathon task specifically limit to Mixed distributions• Train a Machine Learning model which classifies the mixed distributions into different types
Things Provided	<ul style="list-style-type: none">• Labelled data sets showing values of process parameters over time – <i>iconpro_mn</i>, <i>iconpro_mnrw</i>• Three types of Labels – type, number of components, underlying distribution
What do we expect ? Task	<ul style="list-style-type: none">• Use of coding Language – Python (preferable), but open to C++, R• Use of ML algorithms – Neural Networks, SVM, Expectation Maximization, Bootstrapping etc.• Classify dataset <i>iconpro_mn</i> based on distribution type• Classify dataset <i>iconpro_mn</i> based on number of components• Identify jumps, outliers and trends along a curve of process parameter values over time
Bonus Task	<ul style="list-style-type: none">• Classify dataset <i>iconpro_mnrw</i> based on - <i>type, components, underlying distribution</i>
Report	<ul style="list-style-type: none">• Architecture of model used/Algorithm approach• Metrics – Accuracy, Confusion Matrices, any other metrics on test Dataset• Qualitative Analysis (<i>Optional</i>)



THANKS!

Any questions? You can find me at

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