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Root Cause Analysis technologies to optimize and enhance manufacturing processes



Current Journey

Reviewed more than 20+ Customers

A single failed batch could result in a loss of up to \$1.2M in Life Science



Root Cause Analysis (RCA) could take up to 12 weeks



Accomplishments:

Optimized Process

- AI based Auto-RCA to streamline RCA processes to reduce the time required for root cause analysis **from weeks to hours**
- The impact is significant across the Life Sciences, Consumer Packaged Goods (CPG), and Chemical industries. These industries manufacture products that save lives, feed families, and power the global economy

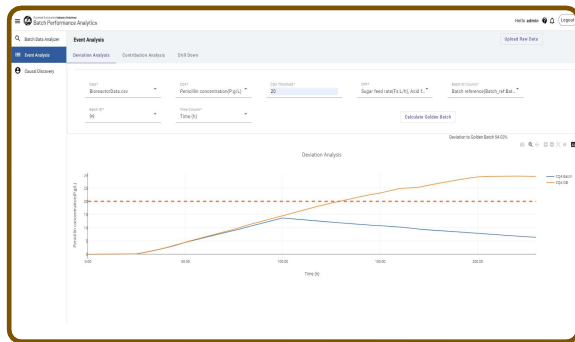
Our Solutions

- GenAI-based Copilot for Batch Data Analysis
- Statistical Solutions for Golden Batch and Deviation Computation
- Causal Analysis for cause-effect discovery
- Explainable AI and Optimization Solutions for optimal control

Examples of root cause analysis technologies



Golden Batch Analysis



- WHAT: Automated deviations discovery
- HOW: Advanced statistical computations



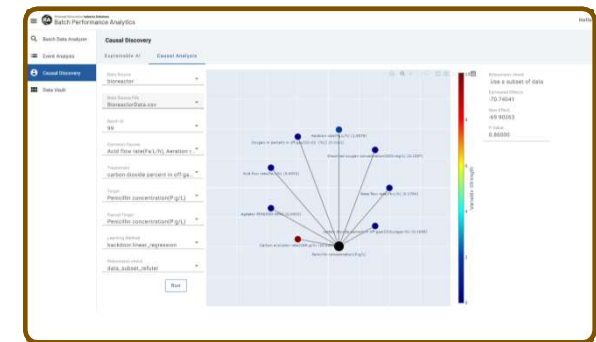
Batch Data Analyzer



- WHAT: Zero coding data insights exploration
- HOW: Generative AI based Assistant



Causal Discovery



- WHAT: Causal-effect relationships discovery
- HOW: Explainable AI and Causal Analysis

Takeaways and Lessons learned

- By automating the Root Cause Analysis process, we have been able to **eliminate human and manual errors and delays**. This contributes to operational cost savings.
- By automatically calculating the golden batch and deviations through the statistical process, we can **accelerate the detection of Out-of-Trend and Out-of-Spec conditions**
- The AI-driven automated Root Cause Analysis **shortens the analysis life-cycle** allowing for near real-time process level adjustments.
- The combination of Machine Learning engineering, explainable AI, causal analysis, as well as a GenAI-based co-pilot chatbot, allows for **a more comprehensive understanding of key quality contributors to the deviations**.

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