**QUARTIC.AI**

Optimized Today- Autonomous Tomorrow

Batch MVDA and MSPC

Current MVDA tools are often limited in their scope, capabilities, and ability to scale. Users are forced to use a multitude of tools and the efforts spent on offline investigation are difficult (and expensive) to deploy for real-time analysis. Furthermore, statistical techniques used in legacy MSPC workbenches are limited in their capability when handling large, multivariate, non-linear data sets. With manufacturing processes, and their corresponding data sets becoming more complex, the limitations of traditional analytics tools are compounding.

Combining machine learning techniques with PCA, PLS and other statistical methods can overcome these shortfalls – providing analysis of complex, multi-dimensional, non-linear problems. Quartic's MVDA application makes this easy, by combining automated ML with an intuitive user interface to perform offline analysis, and then seamlessly deploying those findings into an online model for real-time monitoring, performance analysis, and predictive insights. Automating the ML workflow removes the barrier to adopting more advanced analytical techniques. And built on the latest cloud-technologies, the analysis and deployment can easily scale from a single unit operation to entire product lines at multiple production sites.

Analysis can begin in an offline mode by uploading Excel or csv file, without any prerequisites of IT infrastructure or equipment connectivity. Then connect to Quartic's Platform and use contextualized process and product data streams to expand the offline analysis and deploy models for real-time analysis and monitoring or even in predictive mode.
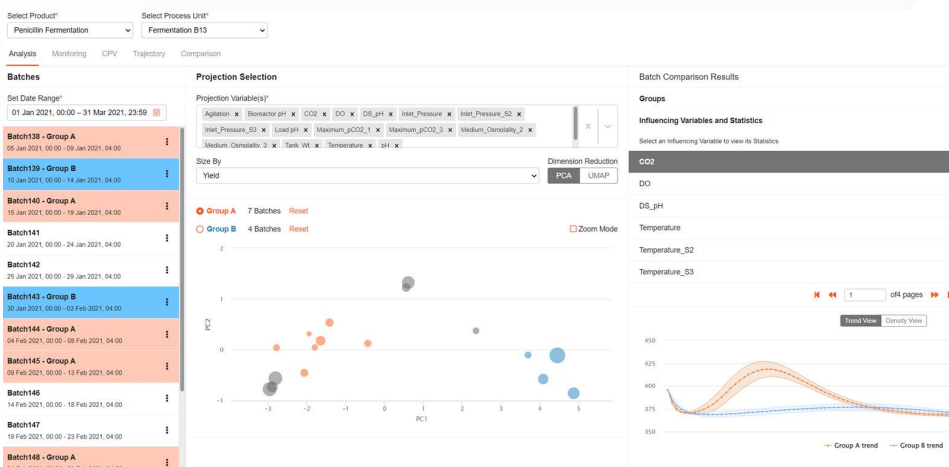
Differentiators

✓ Legacy MSPC (PCA, UMAP, PLS) and modern machine learning in one workflow with state-of-the-art web UX

✓ Contextualized data – product, batch, process train, unit operation - ready for analytics

✓ Off-line analytics and On-line monitoring in a common workflow

✓ Global and local parameter significance/contribution for historical, real-time, and predicted trajectory

✓ Native ingestion, assaying, and modelling of PAT spectral data for consumption in MSPC workflow

Benefits and Outcomes

✓Unified workflow for use by multiple personas – R&D, Process Development (PD), Manufacturing Technology (MTech, MSAT), operations, and quality ensures consistency of knowledge, understanding and investigations

✓Data engineering and data preparation efforts are eliminated – increasing productivity of teams.

✓Elastic scaling in the cloud and on-prem ensures value-based scaling and spend.

✓Investigation and fault detection time is reduced.

Learn More at Quartic.ai