

DATA SCIENCE

The art of giving data meaning. It's the science of combining mathematics, statistics, computer science, and business. The goal is to provide value and understanding to businesses.

TEAM OVERVIEW

Our Industrial Analytics group has a data science team of highly skilled and experienced professionals passionate about extracting valuable insights from data. We specialize in applying advanced statistical analysis, machine learning techniques, and data visualization to solve complex business challenges across various industries. With a strong focus on delivering data-driven solutions, we are committed to helping our clients optimize their processes, make informed decisions, and drive business growth.

FORMAL EDUCATION & PUBLICATIONS

Our team has several advanced degrees and publications on data science. Education includes:

- Ph.D. in Data Science and Engineering, ABD
- Ph.D. in Computer Science & Engineering
- M.S. in Data Science

The team has published several papers on data mining, high-performance computing, parallel and distributed computing, approximate algorithms, deep learning, and graph analysis. Additionally, our team ranked highly in national data analytics competitions.

KEY TECHNIQUE EXPERIENCE

VISION & IMAGE INSPECTION SYSTEM ANALYSIS

Objective: Analyze product characteristics through image analysis.

Approach: Image segmentation by statistical analysis, object localization, and background stabilization.

Impact: Increase in product yield and improved product quality. Reduce maintenance and workforce optimization.

Example: Product Image Analysis, Image Classification.

TIME-SERIES ANALYSIS

Objective: Identify anomalies and event-driven data of time-series data.

Approach: Statistical anomaly detection classifying data. Time-series regressions, forecasting, clustering.

Impact: Reduce process variability

Examples: Predictive Maintenance, PID Loop Monitoring, Utility Monitoring.

DEEP LEARNING & NEURAL NETWORKS

Objective: Understand complex problems and handle complex data.

Approach: Object localization and detection. Time-series regression, classification, and outlier detection.

Impact: Handle complex data effectively, obtaining high precision and accuracy.

Examples: Complex process optimization. Motor Modeling, Predictive Model Control, Flake Thickness.

PRACTICALITY

Our Interstates data science team specializes in implementing data science solutions. We have extensive experience in developing data collection systems and ensuring effective database administration and data aggregation. In addition to working on theoretical models in offline environments, we understand and collaborate with our in-house operational technology and industrial automation teams to help deploy these models in production environments.