

# Multi-Sigma®



By AIZOTH

### Optimize R&D with Al-powered analysis

Multi-Sigma® democratizes sophisticated Al analysis techniques while cutting time and costs associated with R&D experimentation

# Multi-Sigma® No-Code and Cloud-Based **Explainable Al**





- Highly accurate prediction Explainability through factor analysis
- Multiple-outputs optimization

#### Classification Regression Time Series Data **Prediction** Class 1 New Data Class 2 Prediction Class n Prediction **Multiple - Outputs Optimization Factor Analysis** Negative Effect **Positive** Output 2 Input 2 Input 1 Input 3 Input 2 Input 3 Input 199 Output 99 Input 4 Input 200 Output 100 Input 5 **Optimization Chain Analysis** Process 1 Model 1 Input 1-2 Process 3 Process 4 Output 1 Model 3 Model 4 Output 2 Process 2 Model 2 Input 2-2

## Applicable to a variety of fields:



## **Trusted by 100 + leading organizations:**











### **Trusted Security with Environmental Responsibility**

- · Hosted securely on Google Cloud
- Data recovery ensured even in disaster scenarios
- Regular penetration testing by third-party experts
- · CO<sub>2</sub>-free cloud infrastructure



### Dr. Kotaro Kawajiri Founder, Al Expert, Head of R&D





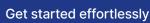




#### **AIZOTH Mission**

Empowering organizations to leverage AI to enhance processes and improve outcomes















# From Standard to Superior

Conventional Solutions	VS	Multi-Sigma®
Large-Scale	Data Required	Small
Moderate	Accuracy	High
Black-box	Model Interpretability	Explainable
Single Target Variable	Output	Multiple Target Variables
Expert Knowledge Required	Expertise	No Expert Knowledge Required
Code Required	Programming	No-Code
High-End Hardware Required	Machine Specifications	No High-End Hardware Required (cloud-based)

# **Cost Reduction and Productivity Improvement**

### Case 1 Materials Engineering

**7,200** experiments are typically required

Only 30 to 60 experiments can be sufficient Multi-Sigma® successfully reduced the number of experiments by more than 99%



## **Case 2** Optimization of Aluminum Alloy Properties

**Predict** aluminum alloy properties from composition and processing conditions



Multi-Sigma® enables:

- Quantifying element and process impact
- Identifying optimal conditions via constrained optimization



# **Unmatched Performance**

achieve predictions with even smaller errors than the industry-leading product. A significant contribution to decision-making precision and operational efficiency.

Multi-Sigma® can



- \*1: Error is evaluated using Root Mean Squared Error (RMSE),
- \*2 : Concrete compressive strength (plotted against the left y-axis),
- \*3: Boston house prices (plotted against the left y-axis),
- \*4 : Pima indian diabetes data (plotted against the right v-axis). (All the data are from Kaggle: https://www.kaggle.com/datasets)

### **Consulting Services**

We, AIZOTH, also have a team of experts, including PhD holders in fields such as engineering, commerce & management, science, and statistics, as well as AI engineers and former researchers from national research institutes.

#### **Training and Lectures:**

We offer expert-led lectures and training on Al analysis and Multi-Sigma®. We also provide hands-on data analysis using your own data, tailored to your needs.

#### **R & D support:**

We collaborate with your team through regular meetings to track progress, exchange insights, and align with your goals. Our support covers everything from data analysis to Al application development, tailored to your needs.







