AIZOTH

A leading-edge Japanese company driving innovation
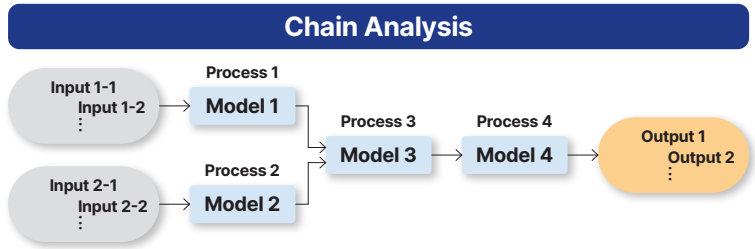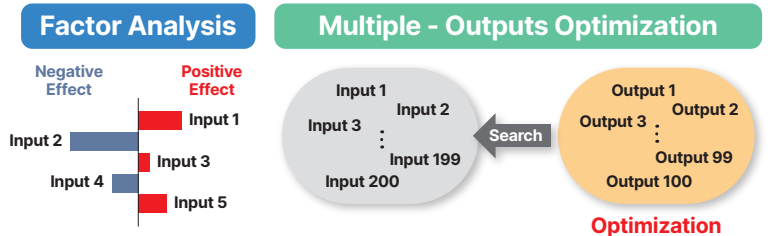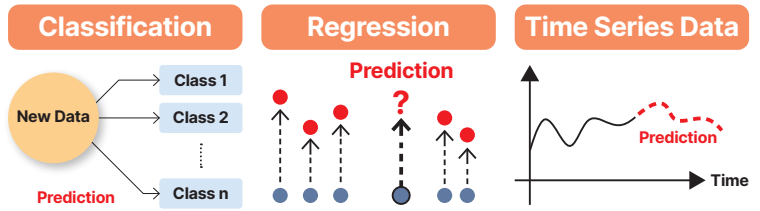
Multi-Sigma

By AIZOTH

Optimize R&D with AI-powered analysis

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

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Multi-Sigma

No-Code and Cloud-Based Explainable AI

Plan — Design of Experiments

Do — Experiments

Check — Prediction

Action — Optimization

- ✓ Cloud-based application
- ✓ Highly accurate prediction
- ✓ Explainability through factor analysis
- ✓ Multiple-outputs optimization

Classification

New Data → Class 1, Class 2, ⋮ Class n

Prediction

Regression

Prediction ?

Time Series Data

Prediction — Time

Factor Analysis

Negative Effect — Positive Effect

- Input 2
- Input 1
- Input 3
- Input 4
- Input 5

Multiple - Outputs Optimization

Input 1, Input 2, Input 3, ⋮ Input 199, Input 200 ← Search ← Output 1, Output 2, Output 3, ⋮ Output 99, Output 100

Optimization

Chain Analysis

Input 1-1, Input 1-2 ⋮ → Process 1 **Model 1**

Input 2-1, Input 2-2 ⋮ → Process 2 **Model 2**

→ Process 3 **Model 3** → Process 4 **Model 4** → Output 1, Output 2 ⋮

Applicable to a variety of fields:

- Chemical Engineering
- Mechanical Engineering
- Healthcare & Medical Sciences
- Agriculture
- Sales and Marketing

Trusted by 100 + leading organizations:

KAGOME | SWCC GROUP — Creating for the Future | MIZUNO | muRata — INNOVATOR IN ELECTRONICS

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_2-free cloud infrastructure

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

AIZOTH 2014-Present | OECD 2019-2020 | MIT 2011-2013 | AIST 2005-2023

AIZOTH Mission
Empowering organizations to leverage AI to enhance processes and improve outcomes

TCI Venture EXCELLENCE AWARD 2023 | Ibaraki Innovation EXCELLENCE AWARD 2023 | Ecotech Grand Prix CORPORATE AWARD 2021

Get started effortlessly

Upload a CSV file and see optimized analysis in a cloud-based, browser-friendly platform

Google Cloud

Free Trial

Contact us to start your one-month free trial or schedule a free consultation: info@aizoth.com | https://aizoth.com/en/

AIZOTH

Multi-Sigma

Drive Innovation in Your
Research & Development with **AI**

1 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)

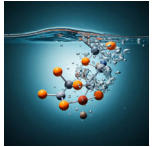## 2 Highest Accuracy and Productivity Improvement

Case 1 Hydration Free Energy

1,825 molecular descriptors; the analysis is **challenging**

Achieved the **highest prediction accuracy**

Reduced errors by over **28%** compared to the best existing method

Case 2 Alzheimer's Prevention Drug

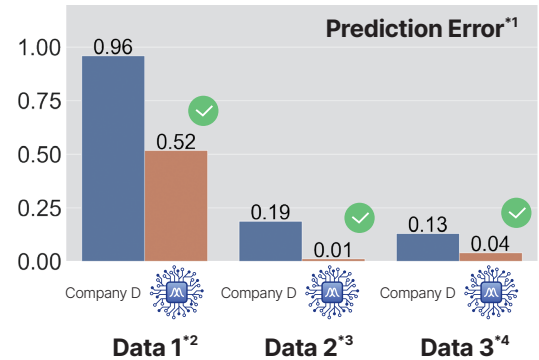Minimizing side effects is **extremely challenging**

Compared to the original data, it successfully increased pharmaceutical activity by **more than 10** times while simultaneously reducing the probability of side effects to **6.2%**

3 Unmatched Performance

Multi-Sigma can achieve predictions with even **smaller errors** than the industry-leading products

Prediction Error[1]

	Data 1[2]	Data 2[3]	Data 3[4]
Company D	0.96	0.19	0.13
Multi-Sigma	0.52	0.01	0.04

Y-axis values: 1.00, 0.75, 0.50, 0.25, 0.00

*1 : Error is evaluated using Root Mean Squared Error (RMSE),
*2 : Product characteristics,
*3 : Anomaly detection from waveforms,
*4 : Formulation of raw materials. (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 AI 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 AI application development, tailored to your needs.

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