

Rescale AI Physics

THE OPERATING SYSTEM FOR AI-FIRST ENGINEERING

AI-first engineering requires operationalizing broad sets of new technologies at scale. Rescale AI Physics is an end-to-end operating system for deploying surrogate models and AI digital twins. Rescale empowers engineers to create high-accuracy models that run inference at a fraction of the time and cost of traditional methods.

DATA AND SIMULATION CONSTRAINTS HOLDING ENGINEERS

Expand Design Exploration

Shift simulation into design loops to explore and refine more designs faster.

Turn Data Into Physics Predictions

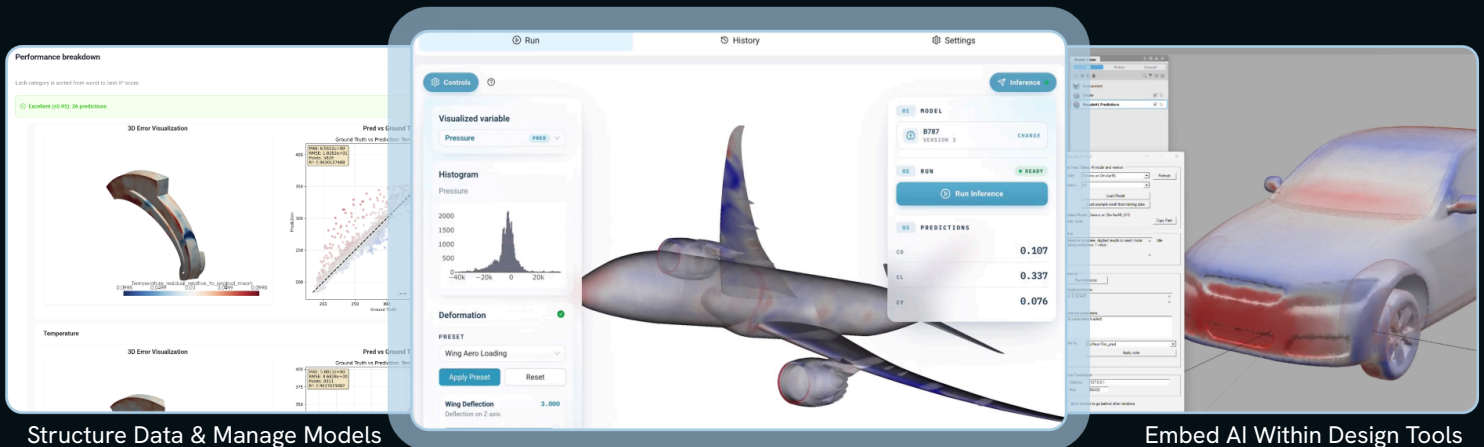
Unlock historic and dead data to train custom AI models that reduce cycles.

Deploy AI Physics Across Lifecycles

Embed inference directly into existing processes across the product lifecycle.

THE MOST COMPLETE PLATFORM FOR MODERN PRODUCT DEVELOPMENT

AI surrogate models are accelerating multiple phases of product development and lowering the cost of innovation, but are often deployed in isolation. Rescale AI Physics powers the full surrogate model lifecycle — from data prep to inference — and embeds directly within the workflows engineering teams already use to give every engineer access to AI methods.



Structure Data & Manage Models

Predict Performance in Real-Time

Embed AI Within Design Tools

REAL INNOVATORS. REAL RESULTS.

"We've experienced firsthand how Rescale's software product suite can speed our AI physics simulation capabilities and catalyze adoption of our digital twin initiatives."

—DR. OM NALAMASU | CHIEF TECHNOLOGY OFFICER, APPLIED MATERIALS



4X

Increase in Design Candidates
Evaluated Per Development Cycle

30X

Greater Cost-Efficiency in Broad
Simulation Studies

1,000X

Faster Results with 99%+ Accuracy
vs. Traditional Simulation

ACCELERATE NEW PRODUCTS FROM DESIGN EXPLORATION TO MARKET

Moving beyond one-off model development and isolated pilots requires an integrated platform. Rescale's AI Physics operating system combines compute, data, and AI to accelerate simulation at enterprise scale.

FOR R&D AND ENGINEERING LEADERS DRIVING AI-FIRST INITIATIVES

Reduce dependence on scarce ML expertise

Automate training, validation, and deployment with an end-to-end platform built for digital engineering.

Connect AI methods to existing infrastructure

Integrate with current simulation environments and AI initiatives without disrupting established workflows.

Establish governed AI Physics capabilities

Create an enterprise-ready foundation with validation, lineage, and governance that compounds in value.

Deploy production-ready methods faster

Harness scalable GPU infrastructure, and solver-agnostic tooling to move from pilot to production.

FOR DESIGN ENGINEERS AND SIMULATION PRACTITIONERS FOCUSED ON DISCOVERY

Access real-time surrogate inference

Get aerodynamic and structural performance feedback directly in CAD and visualization tools during design.

Reduce design-analysis iteration loops

Move physics-aware feedback earlier in development so teams converge faster with fewer handoffs.

Evaluate more possibilities faster

Explore thousands of variations and parameters in minutes versus waiting days in simulation queues.

Extend simulation value with hybrid workflows

Train AI surrogate models on past simulation data with continuous fine-tuning and high-fidelity validation.

THE PLATFORM ADVANTAGE: INTEGRATED, SCALABLE, GOVERNED



AI Physics Operating System

Manage data preparation, training, validation, deployment, and governance in one connected environment.



Purpose-Built for Engineering

Data and AI architecture designed for solver workflows and simulation-grounded surrogates.



Turnkey Deployment

Validated model architectures, pre-built connectors, and automated infrastructure to reach production faster.

ACCELERATE YOUR AI TRANSFORMATION WITH RESCALE

The Rescale digital engineering platform empowers R&D and engineering teams with the intelligent HPC, advanced modeling and simulation, agentic digital engineering, and AI physics solutions they need to accelerate innovation in the AI era.



The best way to experience the power of Rescale is hands-on.

Learn more at rescale.com/ai-physics

