



Powering Innovation That Drives Human Advancement

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# **Ansys AI: Artificial Intelligence for Simulation**

2025

# Ansys AI – Transforming Simulation at the Speed of AI










## Accelerate & Democratize Simulation



Extremely fast and physics agnostic predictions which learns from existing data. AI Standalone products.

## Empower your solvers & Generate Data



-  STRUCTURE AI+
-  CFD AI+
-  ELECTRONICS AI+
-  SYNMATRIX AI+
-  GRANTA AI+
-  MISSION AI+
-  OPTISLANG AI+

AI Add-ons to Ansys products across portfolio that enhance simulation.

## Assist your tasks



Natural language assistant for documentation, training, support. Your AI powered assistant within Ansys products.

# Unleash the power of AI for your design with Ansys SimAI

*Ansys SimAI is our new cloud-based AI platform for Simulation:*

- Train the AI without having to parametrize your geometry
- Predict performance across design changes, even when the geometry structure is inconsistent
- **Leverage previously generated simulation results to train the model**

*Ansys SimAI is physics-neutral:*

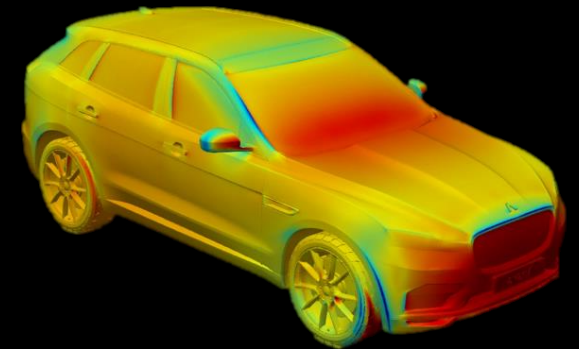
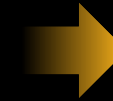
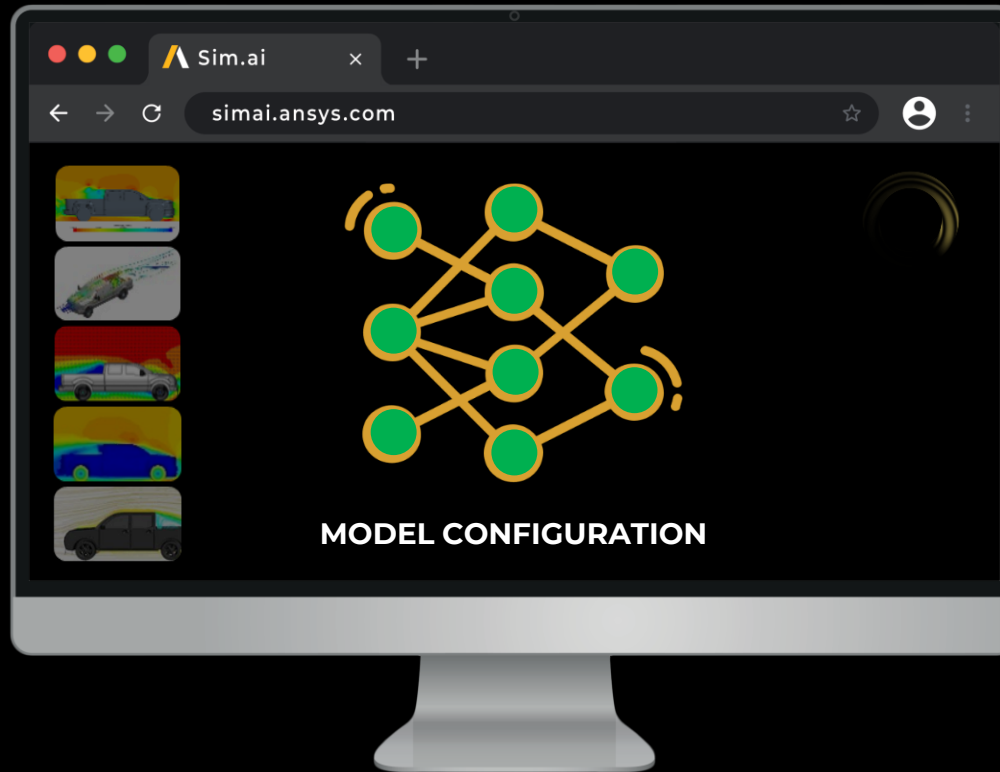
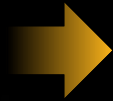
- Any physics – Fluids, Structures, Electromagnetics, Optics
- Across all industry segments – Aerospace, Automotive, Semiconductor, etc...
- Works with any 3D simulation data, whether it is Ansys or not



# Predict at the Speed of AI



**New Design**



**Performance Prediction**

**1- UPLOAD**

*Your Past Data*



**2- TRAIN**

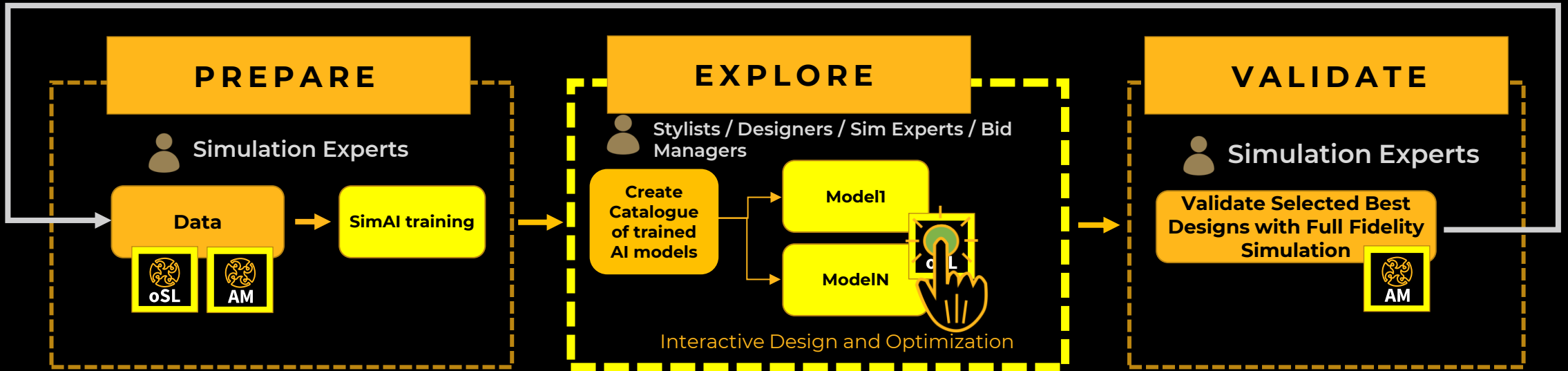
*Your AI Model*



**3- PREDICT**

*In Seconds*

# Ansys SimAI makes simulation more accessible to a wider audience



**FLUIDS**

Vehicle Aerodynamics  
Thermal management  
Cooling design

**STRUCTURES**

Generative design  
Impact performance  
Stress + deformation

**ELECTRONICS**

Antenna design & placement  
Magnet placement  
PCB EM losses and forces  
Electric motor design

**OPTICS**

Illumination

# Ansys SimAI – In your organization

## 3D simulation and test results



Simulation Analyst



Test Engineer



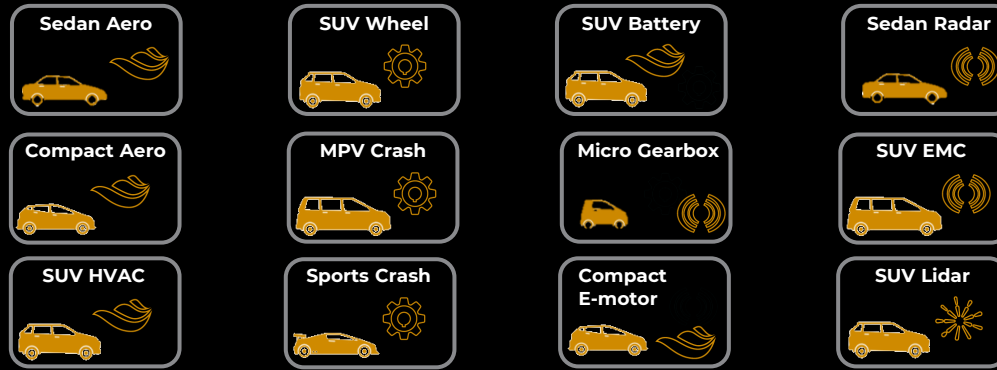
Method Engineer



Upload your data

🕒 1min per Gb

## Your catalog of trained AI models



Train your AI models

🕒 48h

## AI prediction



Simulation Analyst



Chief Architect



Project Manager



Designer



System Engineer



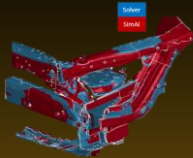
Predict new designs

🕒 30s

# Quantified benefits from validated use cases

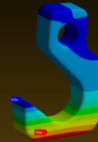


## Bumper Impact Performance



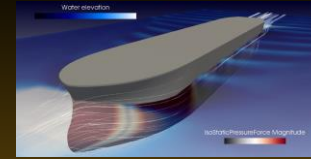
Predict safety performance across design changes faster: **>50x** compared to classical crash simulation

## Crane Hook Design



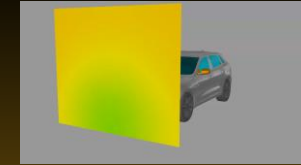
Evaluate an increased variety of hook designs : **~15x** more than conventional simulation techniques

## Hull Design Exploration



SimAI resistance error compared to CFD: **less than 4%** and perfect wave pattern prediction.

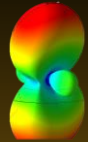
## SUV Aero Performance



SimAI Prediction on new SUV geometry in **less than 1 min**

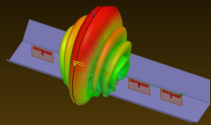


## Antenna Design and Integration



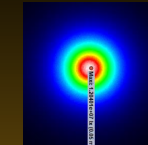
Fast answers to antenna design problems for **extensive trial & error, performance optimization**

## Telecommunication Antenna Array



Evaluate **more antenna placement topologies** to drive innovation

## Optical Systems in Harsh Environments



The fast evaluation capabilities of the SimAI model empower **designers and engineers** to explore more environments

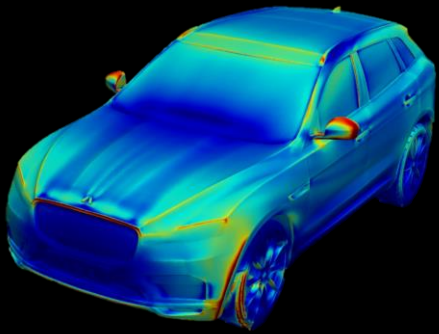


# Apply AI to different physics

## Fluids



Fluent

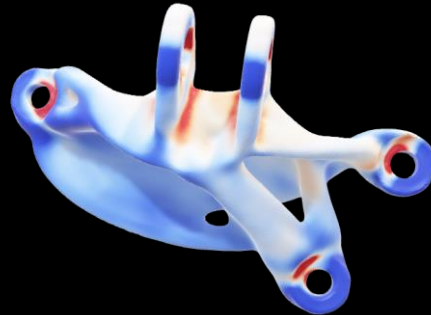


CFD comparison  
Thermal management  
Cooling design

## Structures



Mechanical  
LS-DYNA

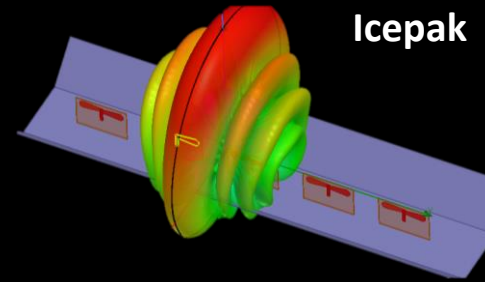


Generative design  
Wire forming process  
Impact performance  
Crystal plasticity homogenization  
Stress + deformation

## Electromagnetics



HFSS  
Maxwell  
Icepak

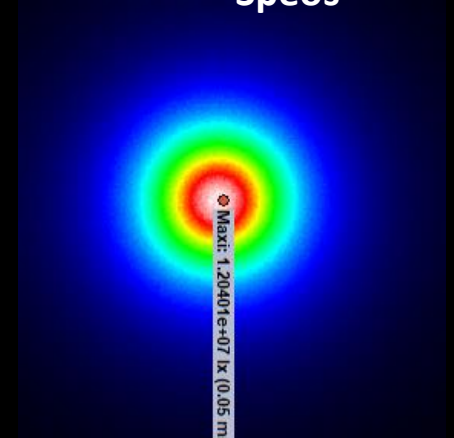


Antenna design & placement  
Magnet placement  
PCB EM losses and forces  
Electric motor design

## Optics



Speos



Illumination

