

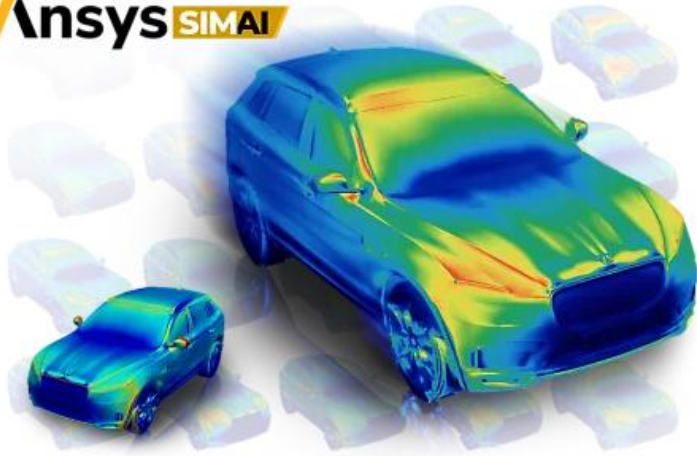


A Successful AI Initiative

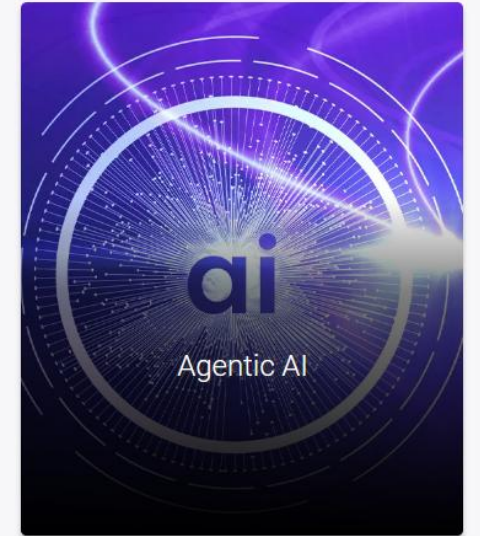
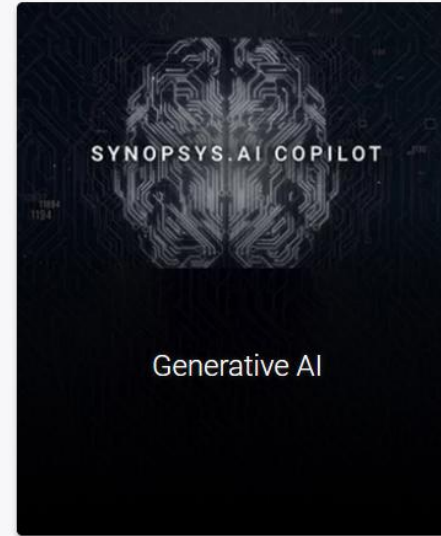
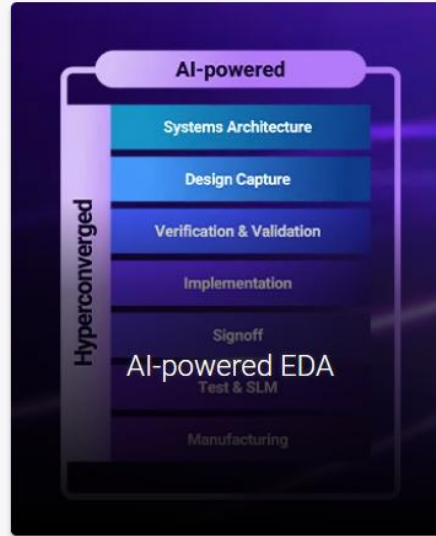
MingYao Ding – Sr. VP of Applications Engineering
SimuTech Group Inc.

Everyone has an AI initiative

Ansys SIMAI



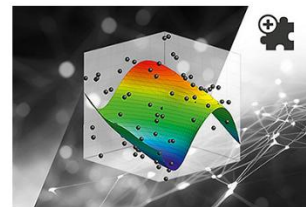
Transformative AI to Drive Your Chip Design to the Next Level



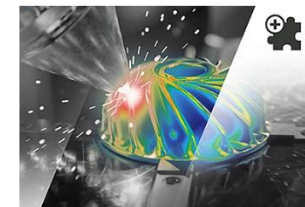
AUGMENT SIMULATION WITH AI ADD-ONS

Ansys AI+

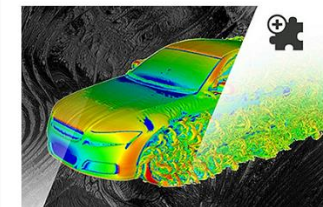
Deliver more accurate results, capture more details, with a rich set of machine learning capabilities, spanning various physics.



optiSLang AI+



Granta MI AI+

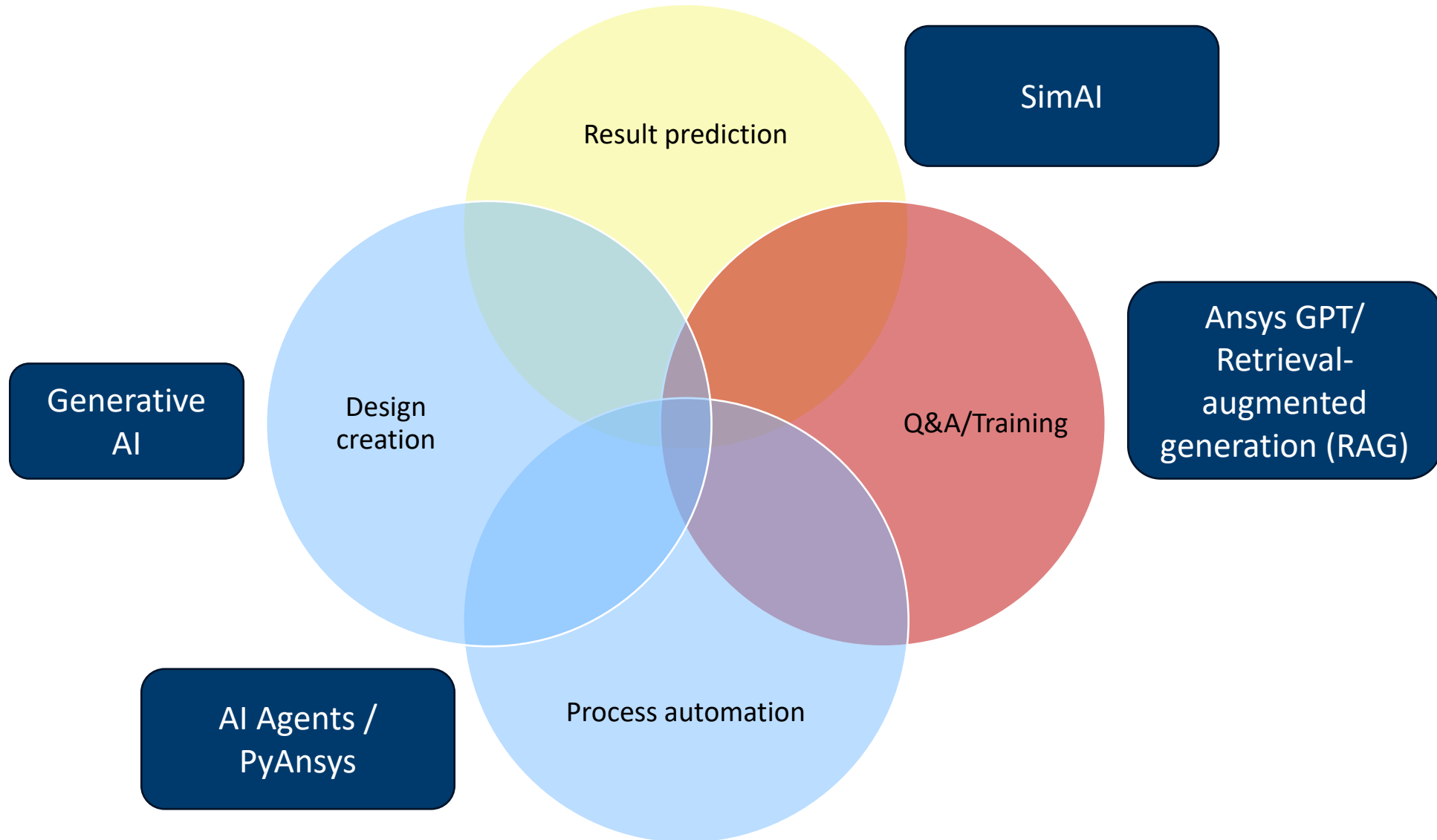


CFD AI+

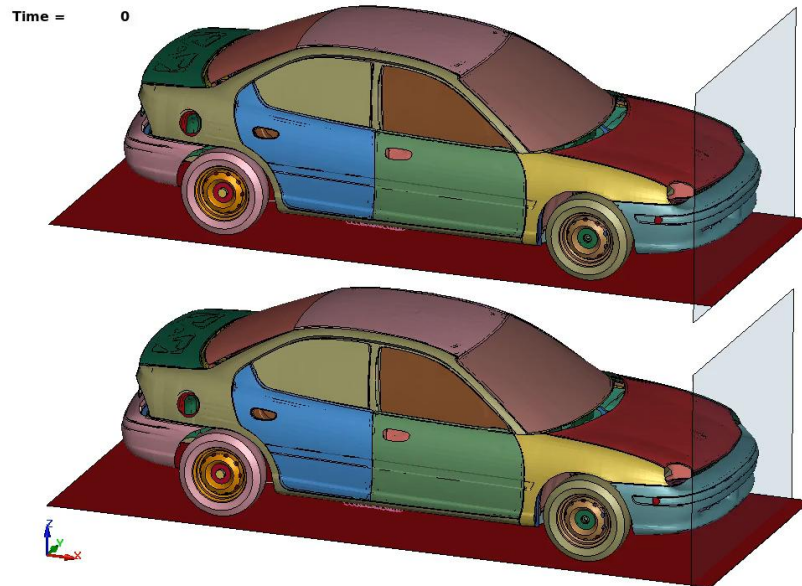
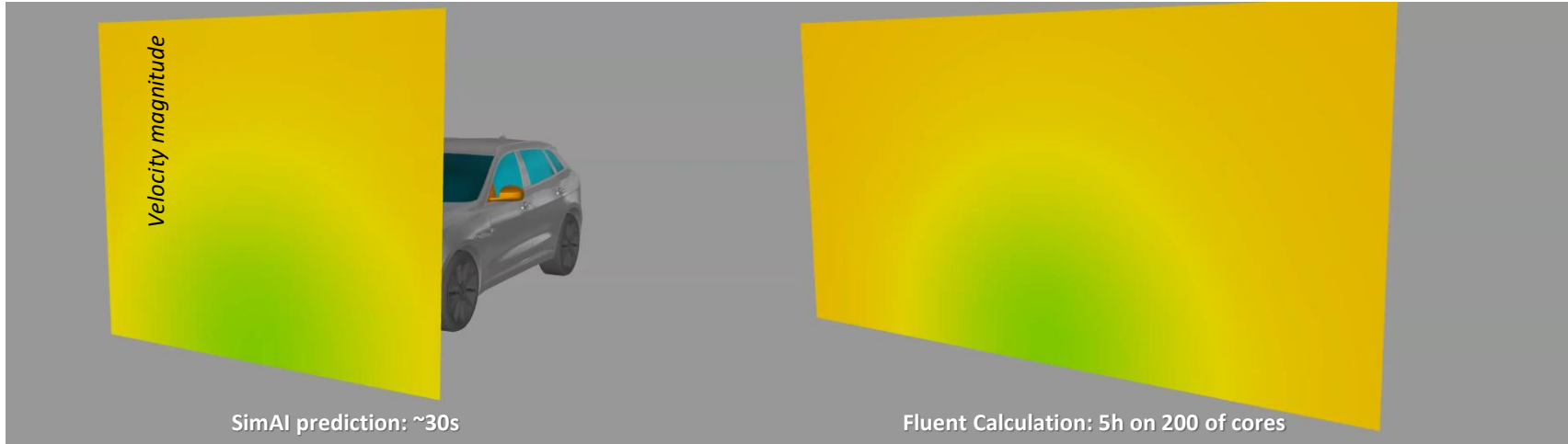


Ansys GPT

Options for your AI initiative



What simulation analysts want?



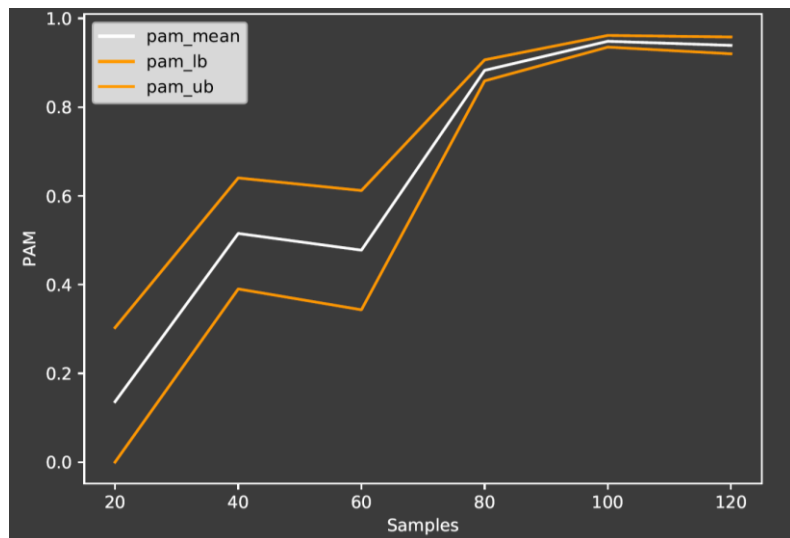
17.5 s (rolling prediction)
or < 1 s if training done with time step as input

0.5 h (20 cores CPU)

Challenges

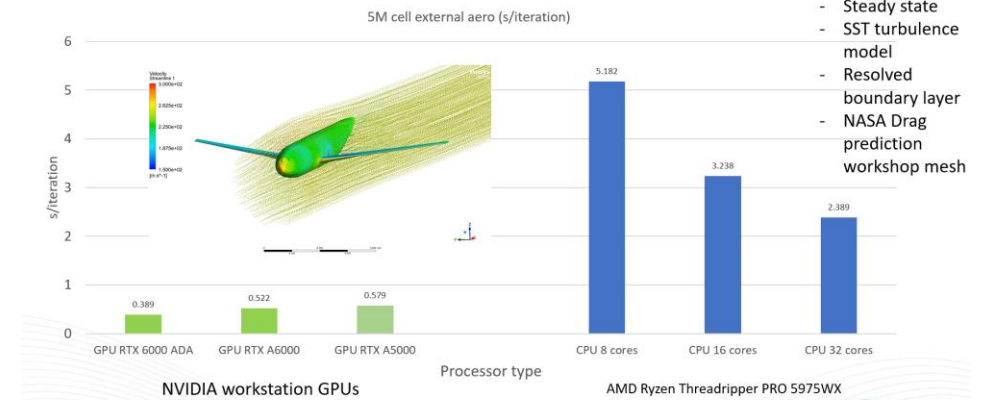


- Accuracy
- Speed
- Number of training samples
- Problem scope (Amount of change allowed)

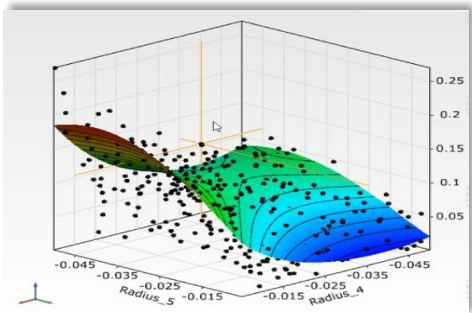


AI VS HPC/GPU

GPU Performance Example



Simulation result prediction AI initiative

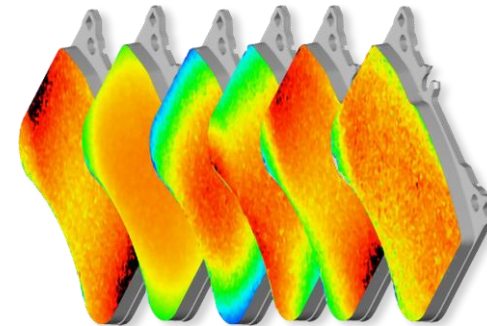
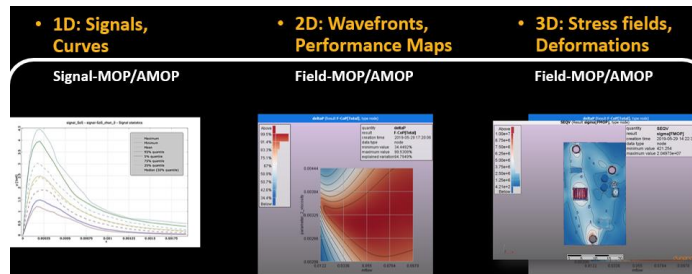


Generate training data efficiently for AI

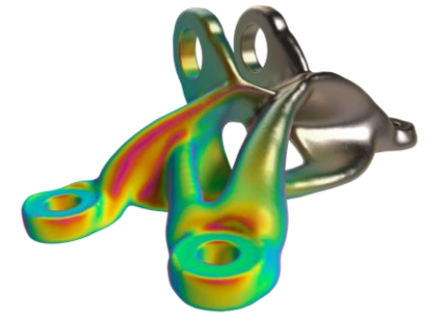
Advanced Meta Modeling

Field meta-modeling (signals, 2D/3D)

Advanced meta-modeling for scalars



On Prem
Surface only



- SaaS
- Surface and volume
- Handle huge datasets (>15 TB)

Question and answer and training



Can integrate with your documentation through API and RAG



A **virtual assistant** designed to assist users with Ansys specific knowledge.



Provides **high quality responses in minutes** by tapping into a vast database of Ansys knowledge.



Holds conversations in **multiple languages**.



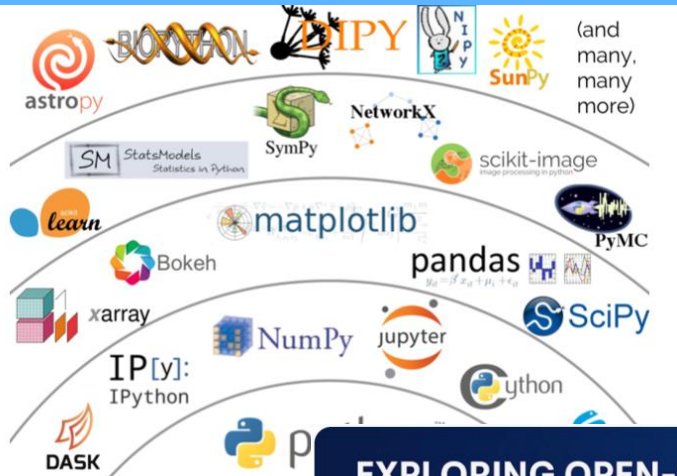
Scalable & secure deployment to customers on Ansys Innovation Space.



Built using Azure OpenAI Service.

Process Automation and Agents

Any tool from which you can write Python (UI is yours to choose)

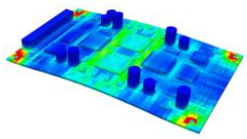


(and many, many more)

PyAnsys Technology



EXPLORING OPEN-SOURCE AI AGENT FRAMEWORKS



PySherlock
Pythonic interface to communicate with Ansys Sherlock

PyMechanical1
Pythonic interface to Ansys Mechanical

PyFluent
Pythonic interface to Ansys Fluent

PyDyna
Pythonic interface to build the Ansys DYNALOG input deck, submit it to the Ansys LS-DYNA solver and postprocess its results

PyEnSight
Pythonic interface to EnSight, the Ansys simulation postprocessor

Postprocess with Python

MAPDL **LS-DYNA**

PyDPF - Post
Pythonic interface to access and post process Ansys solver result files

Build postprocess workflows with Python

PyDPF - Core
Pythonic interface to DPF (Data Processing Framework) for building more advanced and customized workflows

PyAEDT
Pythonic interface to AEDT (Ansys Electronic Desktop)

Ansys Technology

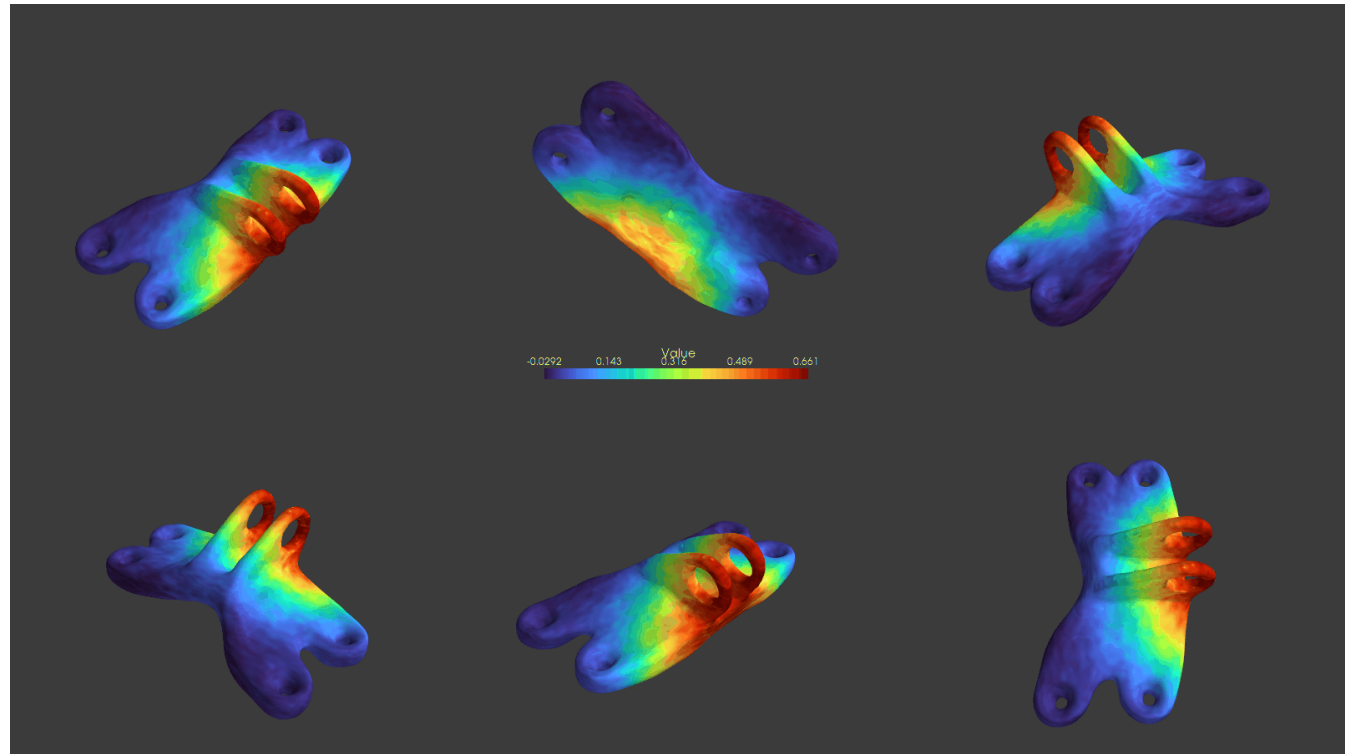
Generative AI



Geometry Generation



Single objective Bayesian optimization on generated shapes



We are here to help with your AI initiative.

