

Simulation Model Surrogater

AI-Based Model Shrinking Compatible with xILS!

1 Issues

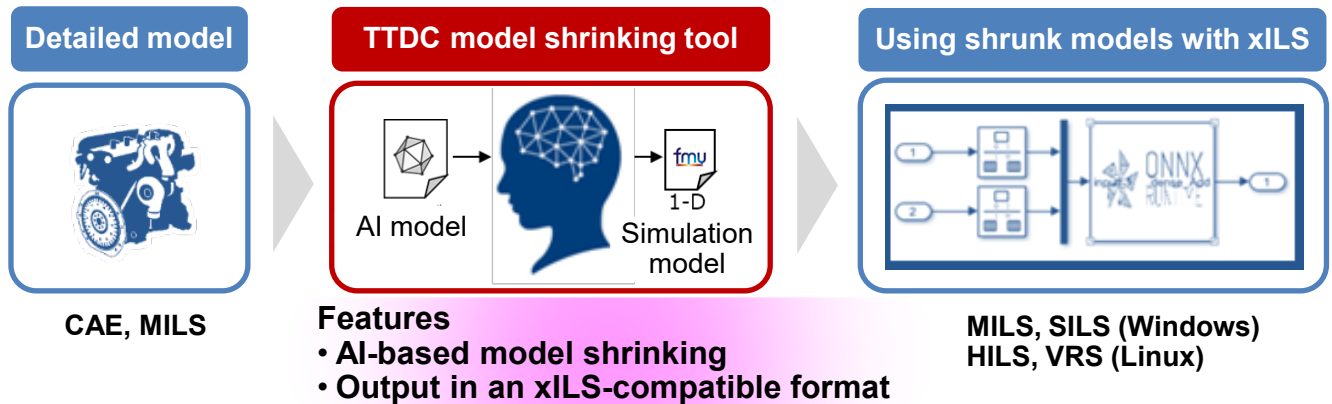
Larger and larger models → Longer simulation (computation) times
→ Lighter models are sought

Making models lighter calls for high levels of expert knowledge

2 Solutions

Shrink detailed models with the **TTDC model shrinking tool**.

⇒ **You can build a lighter simulation environment!!**



3 Function/performance

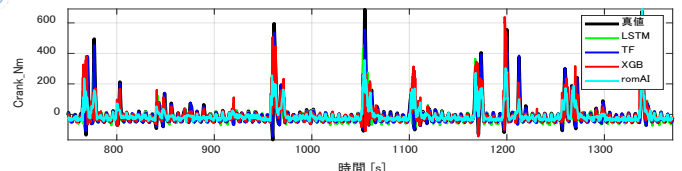
- ◆ **Types of AI (machine/deep learning)**
 - XGBoost
 - LSTM, GRU, Transformer
- ◆ **Input trained models**
 - ONNX format
- ◆ **Output an FMU/S-Function**

Example: Shrinking a CAE engine model

NA engine



- **Computation time:**
5 days → 5 minutes
- **Accuracy (R2): 95%**



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