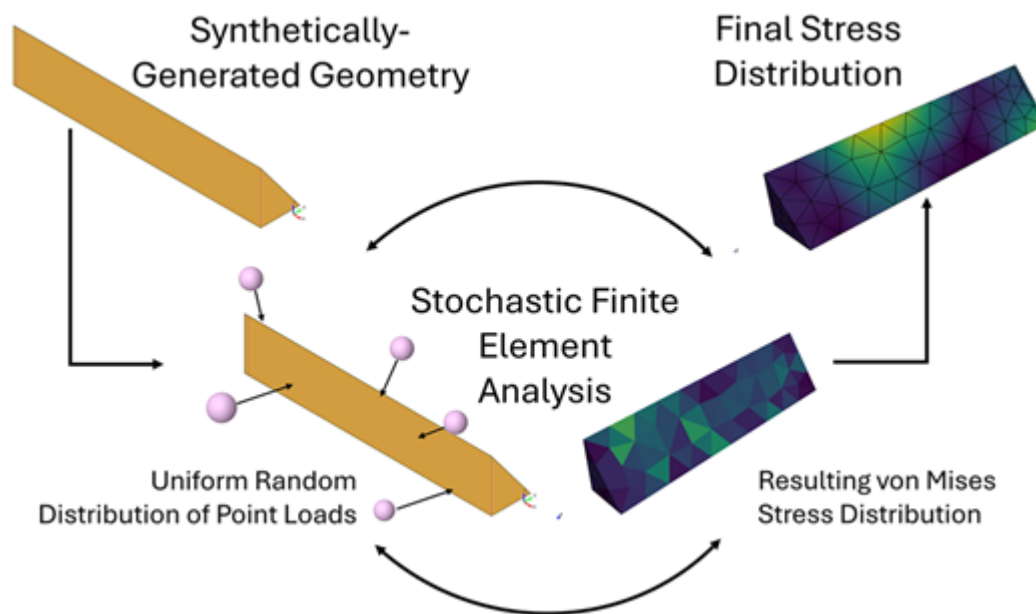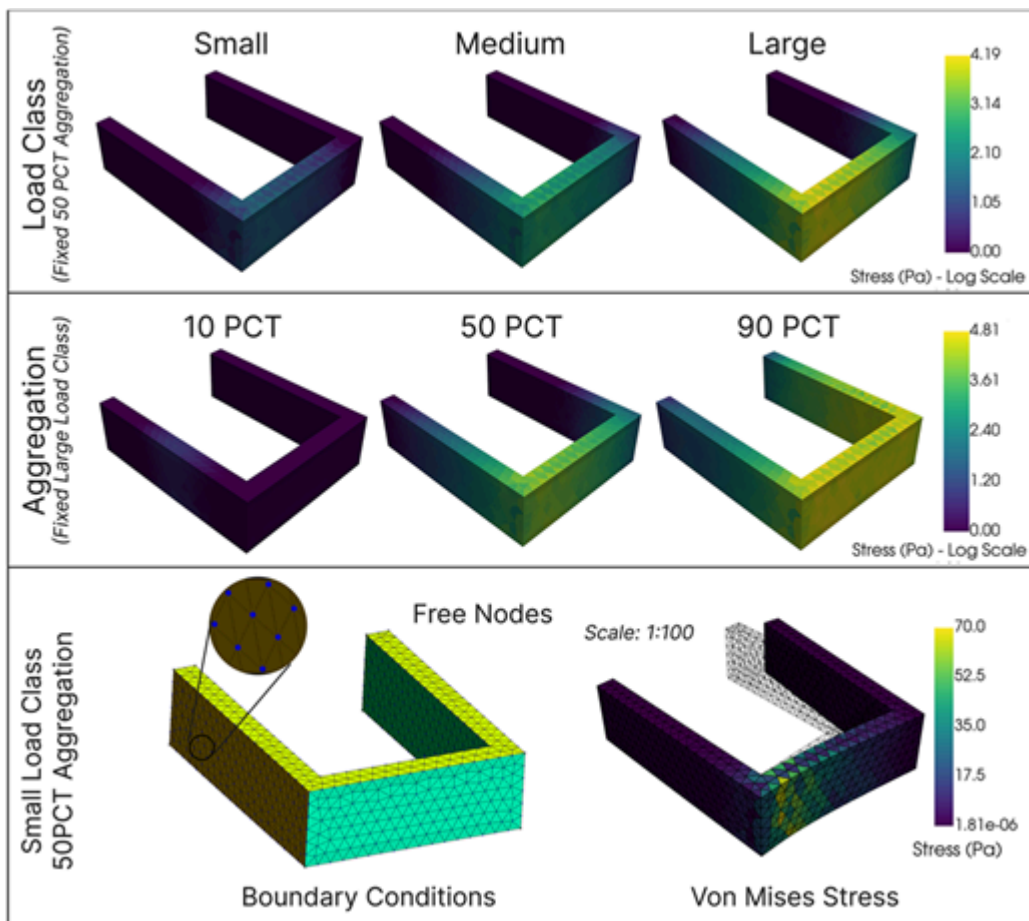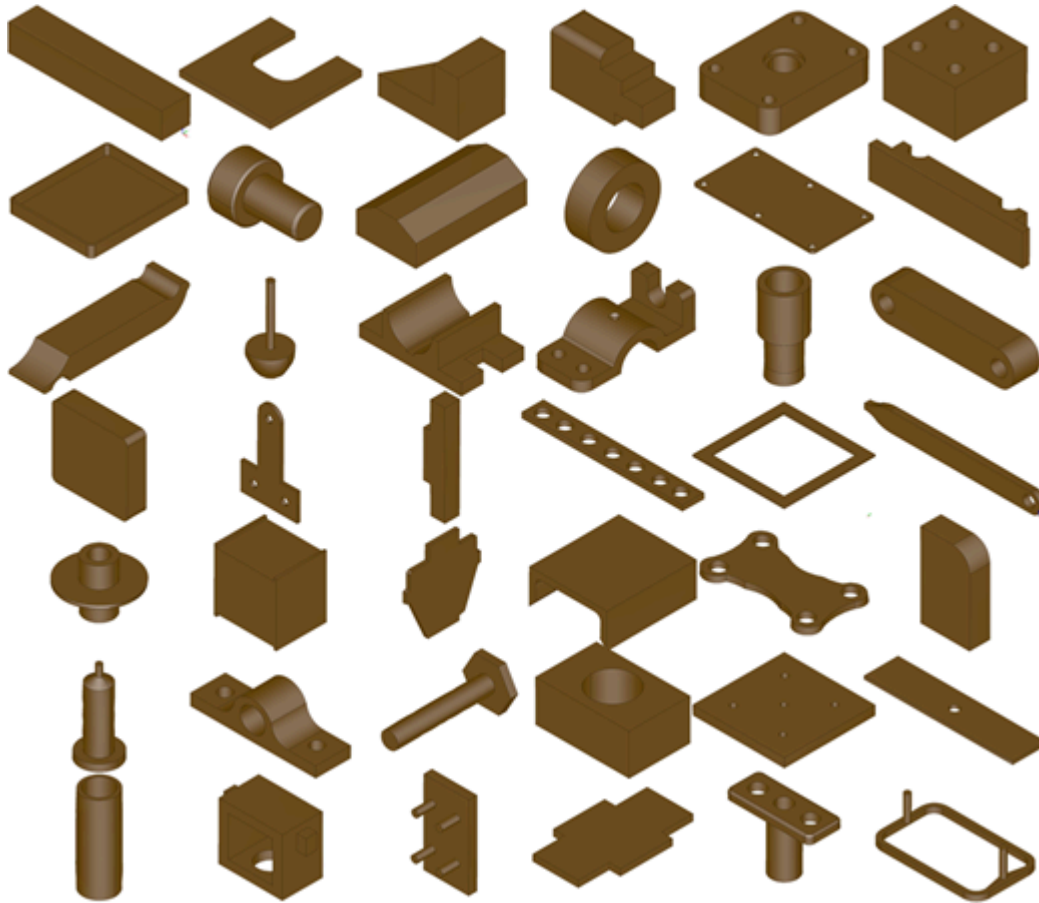# ML4Science Huggingface

Research Goal

Have fast simulations for the dynamics of continuous materials like plane Panels.

Dataset

- Available on [Huggingface](#) and [Related Paper](#)

- Dataset of 16,000 CAD geometries
- Finite Element Simulation results

- Von Mises Stress prediction (when does the material yield)

Method

- Graph Neural Networks to predict system behaviour under load.

- Message Passing and Convolutions
- Physically consistent behavior
- Equivariant Symmetries
- Hierarchical Relationships

Related Papers and Links

- [Dataset and Method Benchmark Paper](#)
- list of relevant architectures
- GraphUnet
- EGNN
- Clofnet (maybe)
- coming ...