

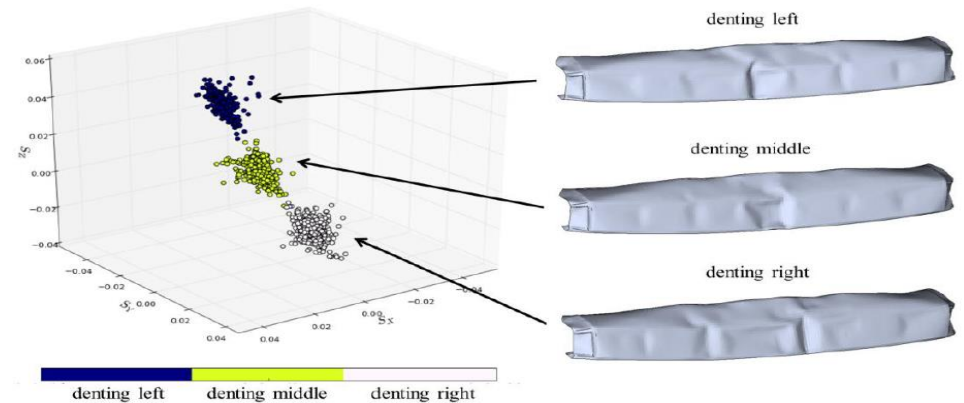
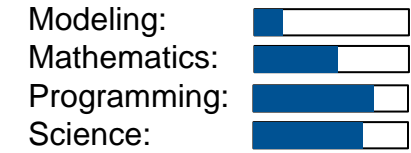
Automatic post-processing of crash simulation data

Task

Implement a code based on techniques from machine learning community in order to evaluate physical behavior of components in a crash simulation in an automatic manner.

- Familiarize yourself with the topic and existing solution approaches in the literature
- Make an interface to automatically extract data from output files from crash solver.
- Dimensionality reduction of simulation data
- Cluster simulation results based on low dimensional data
- Mesh independency
- Apply your developed code on a set of simulation results to cluster and identify main behavior patterns of the components.

Project Characteristics



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Clustering of 100 simulations, 3 major deformation modes are identified [1].

[1] C. Diez, "Machine learning process to analyze big-data from crash simulations," 7th BETA CAE International Conference, 2017.