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Master Thesis

Machine learning to help identifying hidden links between cement chemistry and properties of cementitious materials

Background

- Cement chemistry holds key to its strength development and tweaking it can lead to more sustainable and durable concrete systems.

- **Can we use machine learning and data science to establish direct links between cement chemistry and properties of concrete?**

Key Tasks

- Establish a well curated database for cement/concrete mechanical properties and cement clinker composition through extensive literature review. Few small databases are already available as a starting point.

- Develop database management systems for easy query and processing of the data. For this we can use python based database management tools.

- Get familiar with machine learning tools available in python such as TensorFlow, PyTorch or Sci-kit learn to perform cluster / classification analysis.

- Preform cluster/classification analysis on collected database and present the results.
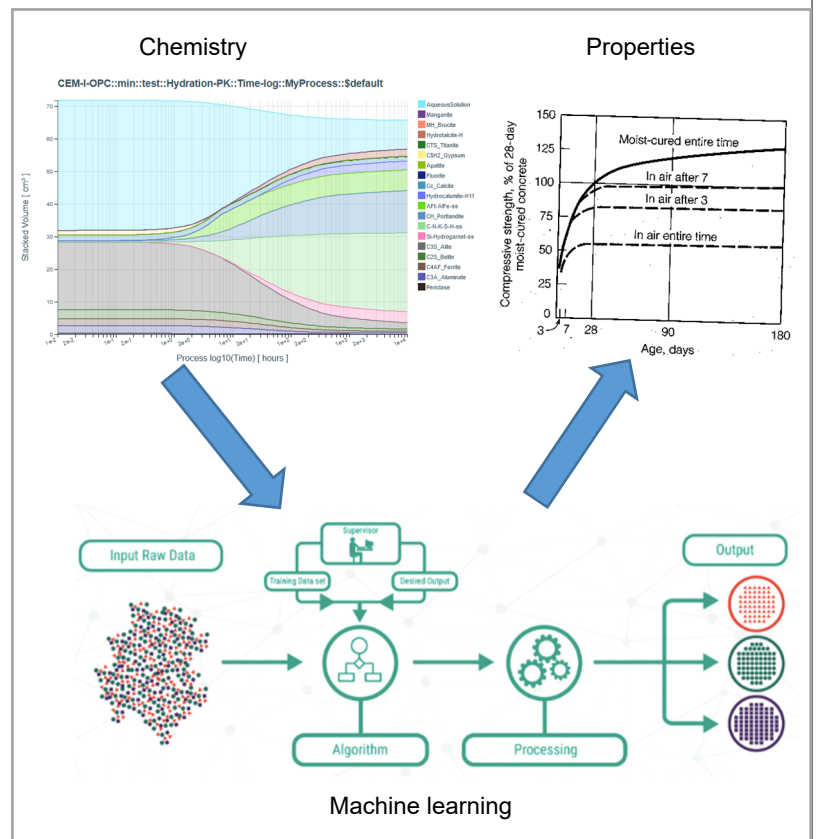
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