

Artificial Intelligence with innovative framework in conjunction with simulations

bachelor-, studies-, master thesis

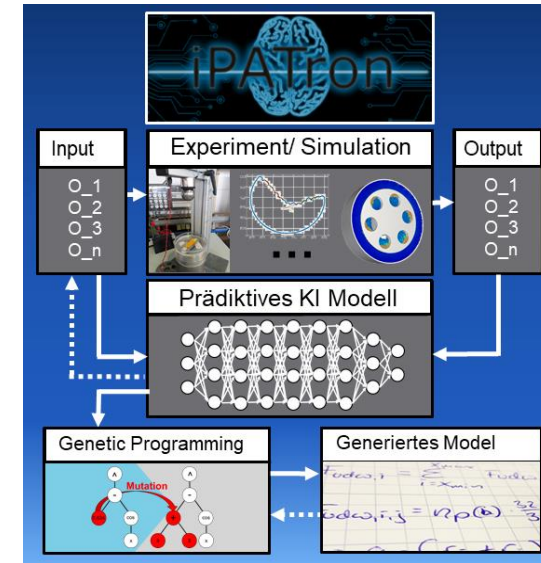
Using an innovative AI framework (including neural networks, genetic algorithms and programming, neocortex-derived AI, etc.), different domain-specific questions are investigated, based on experiments or simulations, including digital twins, surrogate or hybrid models for predictive modelling, optimization and control. Depending on individual interest, the focus can be shifted towards AI, simulation, or coupled issues.

Work packages:

- Application and further development of the AI framework
- Execution & establishment of simulations (CFD/ DEM; if desired MD) & experiments, if necessary
- Surrogate Models, Hybrid Modeling, Digital Twins

Methods:

- Artificial Intelligence (Neural Networks, Genetic Alg. /Progr., Brain derived AI)
- DEM simulations (possibly coupled with CFD); MD as pioneering project possible
- If desired, experimental investigations (e.g. for the generation of training data)



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