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Mechanics goes data - between opportunities and overload

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The growing importance of methodological and application competencies in the field of artificial intelligence (AI) cannot be overestimated. Across disciplines, AI is boosting innovative applications and products. Prominent AI approaches have been developed in the context of applications where data is almost endless, e.g. in speech and pattern recognition. In computational modeling however, even with an ever increasing amount of sensor data, data remains limited. More than that, limited access to information by sensing is the ultimate reason for computational modeling. In the context of computational mechanics, data-driven mechanics has become an emerging research area. In terms of education, this poses a challenge. In computational mechanics, AI cannot be regarded as an alternative approach to former tools, but rather as an additional competence that students need to acquire. Thus, didactic concepts are required that do not let students experience AI as an additional math burden, nor as a contemporary toy.

Micro-learning content is particularly suitable here, as a variety of learning formats are possible: from edutainment to virtual laboratory experiments. They also allow for great diversity in terms of the degree of didactisation and can be integrated into blended learning scenarios, for example. This talk addresses recent approaches from the collaborative teaching project KI4All.