Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

**Herrn M.Sc. Moritz Stüber**

Automatisierungs- und Energiesysteme  
(Prof. Dr.-Ing. Georg Frey)

am

**Donnerstag, 21. Dezember 2023, 12:00 Uhr c.t.**  
per Videokonferenz; Link für MS Teams: [https://bit.ly/phd-stueber](https://bit.ly/phd-stueber)  
Raum für die Prüfung: Gebäude C9 3, Raum 0.13  
(Konferenzraum im Tagungsgebäude des Graduate Centre)

**Thema der Dissertation:**

**Models and Simulations in the Semantic Web**

Models of the dynamic behaviour of mechatronic systems and their simulation provide a helpful way of dealing with the systems' inherent complexity during both development and operations. However, the current state of technology has two significant shortcomings with respect to the use and reuse of models and simulations in a distributed setting. The use of Semantic Web concepts and -technologies to mitigate these challenges by providing Modelling and Simulation (M&S) entities and -capabilities as a service was explored. Specifically, models and simulations were made available through a hypermedia API—a service that fully implements the architectural style of the Web, Representational State Transfer (REST). It is found that the approach increases the Findability, Accessibility, Interoperability, Reusability (FAIRness) of the exposed M&S entities and -capabilities and enables software agents to use them without being specifically programmed to do so on a syntactic level. Both aspects promote the models' reuse for system development and -operations.

Saarbrücken, 07.12.2023

Prof. Dr. Uli Kazmaier