Module name	**Deep Neural Network Hardware**
Module number	CMS-TRK-DNNH
Senior Lecturer	Prof. Dr. Christian Georg Mayr christian.mayr@tu-dresden.de
Qualification objectives	Students have a solid knowledge of the key design decisions of DNN accelerators. They are able to select or design an accelerator for a given application. You know and understand the necessary steps to run deep neural networks (DNNs) on hardware accelerators and common optimisation methods for DNN accelerators.
Contents	The module includes the design of hardware accelerators for artificial neural networks – deep neural networks – from architectures to arithmetic building blocks, hardware and software co-designs for DNN accelerators, necessary steps to execute DNNs on hardware accelerators, as well as current optimisation methods and novel approaches for DNN accelerators.
Forms of teaching and learning	The module includes lectures of 2 SWS, exercises of 2 SWS and self-study. The language of the lectures and exercises will be English.
Eligibility for participation	No knowledge is required.
Usability	In the Computational Modeling and Simulation Masters Course, the module is a compulsory voting module in the Track Applied Artificial Intelligence, to be selected in accordance with Annex 2 to the Specific Examination Regulations. The module cannot be chosen in the Master's Course Computational Modeling and Simulation if this or a module with substantially the same content from a Course with which the entry conditions under § 3 of the Studienordnung have been met has already been completed. The module provides the pre-requisites for the modules it designates under the pre-requisites for participation.
Conditions for the award of credits	Credits are awarded when the module test is passed. The module test consists of a 90-minute away day. The language of the test will be English.
Credits and marks	The module allows 5 credit points to be obtained. The module score corresponds to the test performance score.
Frequency of the module	The module is offered every summer semester.
Workload	The total workload is 150 hours.
Duration of the module	The module covers 1 semester.