

Seminar series of the Graduate School GRK 2078

Referee: **Dr. Charlotte Debus**
Junior Research Group Leader
Steinbruch Centre for Computing (SCC)

Dates: Thursday, January 19, 2023

Time: 15:45-16:45pm

Location: Building 10.81, Emil Mosonyi-Hörsaal (HS 62)
Please note that you can also participate in the event online

Title: **Energy Efficient AI – What it means and why we should care**

Abstract

Next to everyday life applications like smart phones, autonomous driving or voice assistants, artificial intelligence (AI) methods have also revolutionized data analysis, system monitoring and control optimization in scientific research and engineering. This growing application landscape and the ever increasing prediction accuracy of AI go hand in hand with entirely new challenges, that need to be addressed urgently: The sheer size of modern deep learning (DL) models result in a continuously growing hunger for compute, pushing AI research towards large scale models that run on multiple accelerators and supercomputers. However, the increased demand in compute resources comes at the price of growing energy consumption, which now raises the question regarding sustainability and environmental friendliness of AI applications. In recent years, the topic of GreenAI has received increasing attention, causing a slow but steady paradigm shift in AI research from hunting after ever improving accuracy metrics towards balancing predictive power and resource consumption of models. In the talk, we will discuss the need for quantifying energy consumption of DL workflows, highlight both technical and algorithmic challenges in the measurements of energy consumption and touch upon current approaches for developing energy efficient DL models.

You are cordially invited to take part in the event.

Prof. Dr.-Ing. Thomas Böhlke
(Spokesperson of GRK 2078)