<u>**Keynote 2**</u>

Human-Centered Design of AI-driven systems – From Substitution to Co-Adaptation

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AI-driven systems are increasingly used for decision support in all areas of our society. They filter, sort, evaluate, and recommend based on the data available to them. When introducing these systems in an organization, an often-mentioned assumption is that technology can replace or at least support humans. Thus, the introduction of AI technology is conceptualized as a 'substitution problem': In a fixed workflow, selected tasks are replaced by an algorithm, which leads to, amongst others, less labor, fewer errors, and higher accuracy. However, more recently, many problems occurred when using these systems in a societal context. These problems attribute to the fact that the introduction of AI-driven systems does not consider two fundamental properties of these technologies: (1) technology is not value-neutral, and (2) the delegation of formerly human tasks to technologies (or vice versa) can lead to significant shifts in social practices and responsibilities. In my talk, I argue for an alternative perspective on the design of AI-driven technologies. Designers should incorporate the interdependence of joint human-machine activities, i.e., their co-adaptation.

One approach in the emerging field of Responsible AI, Ethical AI, Explainable AI is Human-Centered Machine Learning, which reframes existing machine learning workflows based on the existing situated human working practices. Approaches and techniques that are developed in this field provide concrete guidance in the design of AI-driven systems. I take a classical Machine Learning-pipeline as a starting point in my considerations and systematize existing challenges in the form of biases in this pipeline. I re-conceptualize these biases into so-called points of participation that aim supporting especially the interpretability and contestability of the input-model-output relations. By using two use cases, I want to show how quite different approaches to introduce AI-driven technology can lead to very different outcomes. I conclude this talk by providing recommendations for an alternative design approach for AI-driven systems to provoke further discussions during the conference.