Mixed-initiative engineering design: towards a more-than-human design process

Product innovation is a multi-step process: a creative phase where ideas are born, an evaluation phase where the ideas are evaluated, and an implementation phase where these ideas become tangible. While computer-based assistance systems are already available for the latter two phases, creativity is often still considered an exclusively human attribute. However, recent advances in artificial intelligence (AI) have challenged this notion, as creative AI agents have demonstrated their potential to create original content. In light of these advances, a new field of research has emerged in the area of AI-enabled design processes, leading to a design process in which a computer agent collaborates with a design team to efficiently and creatively explore the entire design space in search of novel design solutions. We will present first steps towards the development of such an agent.