

Engineering Human Performance... ... in the Age of AI

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We are entering an age whereby the combination of human and machine intelligences is driving us to think beyond the classical paradigm of human-machine interaction design and into one of engineering a teaming or fusion between these capabilities. Human performance engineering is the collection of scientific and design methods that apply deep expertise in how humans think, learn, and behave to the goal of optimizing system performance and readiness. The insertion of advanced AI capabilities in those systems is a game changer, as it introduces a system element that adapts and changes continuously as a result of reasoning about the observations it collects about the work environment and human behavior. Insuring that these hybrid systems behave within the performance envelop they have been designed for is a key challenge for the system designer.

Through examples from the real world and ongoing research projects, we will highlight some key trends in human performance engineering and illustrate how the future of work, in domains ranging from training and education to manufacturing, defense, aviation, and medicine, will be highly dependent on our ability to thoughtfully engineer these new and autonomous human-AI “multi-species” systems.