Data analytics in human factors

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Abstract: Human-Technology Frontier (HTF) is one the National Science Foundation's long term "Big Ideas" to place the nation at the cutting edge of global science and engineering leadership. Dr. Kang will be introducing the [1] importance of vision in Human-Technology interactions and [2] how eye movement characteristics can be used to understand humans' cognitive process and evaluate human performance. Algorithms including, but are not limited to, hierarchical clustering, string edit algorithm, dynamic network, and machine learning are introduced to analyze large amounts of seemingly stochastic eye movement data.

Bio: Dr. Kang's background is in human factors, human-integrated systems engineering, and human computer interaction. His specialty is in developing algorithms to characterize eye tracking data to investigate human decision making processes and develop human performance measures. His overarching goal is to develop theories of human behavior, inform the design of complex systems, and develop decision support tools for alerting and training (education) systems. He previously worked at Samsung and has performed research for National Aeronautics and Space Administration (NASA), Collaborative Adaptive Sensing of the Atmosphere (CASA). Dr. Kang is currently corroborating with Federal Aviation Administration (FAA) and National Oceanic and Atmosphere Administration (NOAA). Within the University, he has been conducting research with Psychology, Biomedical Engineering, Petroleum and Geological Engineering, and Journalism & Mass Communication. Dr. Kang received the Andrew P. Sage Best IEEE Transaction Paper Award in 2016. He also won the Best Presentation Award at the 2017 IEEE BioSmart Conference and the Excellent Presentation Award at the 2019 International Conference on Education and Training Technologies.