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Abstract:
Individuals often must make decisions based on incomplete sets of information resulting in imperfect situational awareness. Situational awareness (SA) entails the perception of critical factors in the environment, comprehending those factors, and predicting future events. SA is derived from an individual's processing of signals, cues, information, data, and knowledge from various sources including the individual's task environment, expectations, mission, training, personal knowledge and other cognitive factors. Ultimately, SA allows for inference, deduction, and prediction tasks which are extremely important to high level decision-making. Information inputs impacting individuals SA emanate from the direct observation of the external environment, communication with others, and interaction with electronic systems. This research investigates methods that will enable the determination of the impact that different sets of information have on the soldier's decision-making processes and ultimately on task performance. The research goal is to design a method that can be used to determine an optimal set of information that would provide a Ground Soldier with the most critical information elements. This goal is especially important when considering the use of information and communications technology devices of limited bandwidth for the purpose of delivery information to Ground Soldiers in the battlespace.