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Human-AI Systems for Making Videos Useful

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Abstract: Video has become a primary medium for communication. Videos including explainers, how-to tutorials, lectures, and vlogs increasingly eclipse their text counterparts. While videos can be engaging to watch, it can be challenging to use videos when seeking information. First, the timeline-based interfaces we use for videos are difficult to skim and browse because they lack the structure of text. Second, the rich audio and visual content in videos can be inaccessible for people with disabilities. What are the future systems will make videos useful for all users? In this talk, Ill share my work creating hybrid AI and interactive systems that leverage multiple mediums of communication (e.g., text, video, and audio) across two main research areas: 1) helping domain experts surface content of interest through interactive video abstractions, and 2) making videos non-visually accessible through interactions for video accessibility. First, I will share core challenges of video informed by interviews with domain experts. I will then share new interactive systems that leverage state-of-the-art AI/ML techniques, and evaluations demonstrating the efficacy of these systems. I will conclude with future research directions on how hybrid HCI-AI breakthroughs will improve digital communication, and how designing new interactions can help us to realize the full potential of AI/ML advances.

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