

This thesis focuses on novel video retrieval scenarios. More particularly, we aim at the Known-item Search scenario wherein users search for a short video segment known either visually or by a textual description. The scenario assumes that there is no ideal query example available. Our former known-item search tool relying on color feature signatures is extended with major enhancements. Namely, we introduce a multi-modal sketching tool, the exploration of video content with semantic descriptors derived from deep convolutional networks, new browsing/visualization methods and two orthogonal approaches for textual search. The proposed approaches are embodied in our video retrieval tool Enhanced Sketch-based Video Browser (ESBVB). To evaluate ESBVB performance, we participated in international competitions comparing our tool with the state-of-the-art approaches. Repeatedly, our tool outperformed the other methods. Furthermore, we show in our user study that even novice users are able to effectively employ ESBVB capabilities to search and browse known video clips.