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Making a long story short: A Multi-Importance fast-forwarding egocentric videos with the emphasis on relevant objects

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Abstract

The emergence of low-cost, high-quality personal wearable cameras combined with the increasing storage capacity of video-sharing websites have evoked a growing interest in first-person videos. Since most videos are composed of long-running unedited streams which are usually tedious and unpleasant to watch. State-of-the-art fast-forward methods currently face the challenge of providing an adequate balance between smoothness in visual flow and the emphasis on the relevant parts. In this work, we present the Multi-Importance Fast-Forward (MIFF), a fully automatic methodology to fast-forward egocentric videos facing these challenges. The dilemma of defining what is the semantic information of a video is addressed by a learning process based on the preferences of the user. Results show that the proposed method keeps over 3 times more semantic content than the state-of-the-art fast-forward. Finally, we discuss the need of a particular video stabilization techniques for fast-forward egocentric videos.

Keywords: Semantic Information, First-person Video, Fast-Forward, Egocentric Stabilization

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