摘要: Video retargeting from a full-resolution video to a lower-resolution display will inevitably cause information loss. Content-aware video retargeting techniques have been studied to avoid critical visual information loss while resizing a video. Maintaining the spatio- temporal coherence of a retargeted video is very critical on visual quality. In the first part of the talk, we will show how to use a panoramic mosaic to guide the scaling of corresponding regions of video frames in a video shot to ensure good spatio-temporal coherence. In the proposed method, a global scaling map for video frames in a video shot is first derived from the panoramic mosaic. Subsequently, the local scaling maps of individual frames are derived from the global map and is further refined according to spatial coherence constraints. Second, we will show how can the proposed video retargeting scheme be used to construct a scalable video coder which supports content-adaptive spatial scalability (e.g., the base-layer and enhancement-layer videos are of different resolution and different aspect ratios) with good coding efficiency. Finally, we will present an objective quality assessment scheme based on geometric distortion and information loss for automatically evaluating the visual quality of a retargeted image.