

Title: Privacy Protection in Video Live Streaming

Abstract:

With the prevailing of live video streaming, establishing an online pixelation method for privacy-sensitive objects is an urgency. Caused by the inaccurate detection of privacy-sensitive objects, simply migrating the tracking-by-detection structure into the online form will incur problems in target initialization, drifting, and over-pixelation. To cope with the inevitable but impacting detection issue, we propose a novel Privacy-sensitive Objects Pixelation (PsOP) framework for automatic personal privacy filtering during live video streaming. Leveraging pre-trained detection networks, our PsOP is extendable to any potential privacy-sensitive objects pixelation. Employing the embedding networks and the proposed Positioned Incremental Affinity Propagation (PIAP) clustering algorithm as the backbone, our PsOP unifies the pixelation of discriminating and indiscriminating pixelation objects through trajectories generation. In addition to the pixelation accuracy boosting, experiments on the streaming video data we built show that the proposed PsOP can significantly reduce the over-pixelation ratio in privacy-sensitive object pixelation.