



## **EDGE-BASED BLOTCH IDENTIFICATION ALGORITHM IN ARCHIVE FILM RESTORATION**

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**ABSTRACT**—Previous blotch identification algorithms perform identification process for each pixel in current frame, which are time-consuming. To deal with this issue, a blotch identification algorithm based on edge detection is proposed in this work. Above all, edges of current frame are extracted by edge detectors, blotch identification area is limited to edge pixels and pixels nearby. To further reduce time complexity, a non-blotch edge removal approach is proposed to remove partial non-blotch edge points. Then, a scanning method combined with local motion compensation (MC)-based SROD blotch identification algorithm is used to identify all blotches from remaining edge points. Abundant experiments have been done to verify our method and compared our method to other two typical previous algorithms. Experimental results show that the proposed approach gives successful identification performances, provides the computational simplicity and outperforms classical algorithms.

**Key Words:** Blotch identification; edge detection; non-blotch edge removal; scanning procedure; film artifacts