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## **Delete an object from video by region growing algorithm**

### **Abstract**

In this project we apply an algorithm to remove all objects from video. As input, the system only needs a user to draw a few strokes on the first frame, roughly delimiting the object to be removed. To the best of our knowledge this is the first system allowing the semi-automatic removal of objects from video with complex background. The key steps of our system are the following: after initialization, segmentation masks are first refined and then automatically propagated through the video. Missing regions are then synthesized using video inpainting techniques. This results in a computational tool that can alleviate tedious manual operations for editing high-quality videos. This project utilizes the Python programming language along with computer vision and machine learning techniques to process and analyze video frames.

The primary goal is to split video frames into quadrants, allowing users to select and remove specific regions from each frame. The project involves functions to split images, remove selected regions, and save relevant information. Future enhancements may include improving user interface, optimizing algorithms, incorporating advanced machine learning models, and expanding support for various video formats. This project demonstrates the application of computer vision and machine learning in video processing tasks for potential practical applications in surveillance, quality control, and environmental monitoring. In this project, we will be using the Python programming language to work on and complete this project entirely.