

Automated Method for Editing Surgical Videos

This technology offers a semi-automated method for video editing surgical videos. It runs full-length videos through a software where the outputs are edited via a computational model with biological tissue and surgical tool recognition.

What is the Problem?

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Surgical videos are commonly used for trainee education, academic publications, and conference presentations. Condensing surgical videos to include only informative scenes can be a largely manual, tedious, and lengthy process. Current automated techniques for condensing surgical videos generally do not provide quality results, as informative scenes are omitted and non-informative scenes are included too often. Video editing remains a manual and time intensive process.

What is the Solution?

The solution is a semi-automated method for video editing surgical videos that includes key scenes that accurately summarizes the surgery. Full-length videos are run through the software, which outputs an edited surgical video that retains key scenes and eliminates non-informative scenes. This is done via a computational model, where images of a source image stream as valid images or invalid images based on whether the images include biological tissue or a surgical tool; and generating a condensed image stream that includes the valid images. Another method includes classifying input images as valid images or invalid images using a clustering algorithm that classifies each of the input images into either a first group or a second group and using labels that indicate whether the input images include a surgical tool. The method also includes training a computational model to identify the valid images based on whether the valid images include biological tissue or a surgical tool, or whether the valid images have at least a threshold level of clarity.

What is the Competitive Advantage?

Current automated techniques for condensing surgical videos can result in the elimination of informative scenes, or the inclusion of non-informative scenes. This system will enable automatic video editing, saving time and money during editing and training.

Technology ID

BDP 8131

Category

Software/Healthcare IT
Selection of Available
Technologies

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Patent Information:

[US20220262098A1](#)

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