Multi-format Video Frame Grabber ImageJ Plugin - MVFG

Abstract

Currently, ImageJ presents itself as a good working tool for medical imaging research. Image processing and analysis using specific ImageJ plugins is a simple process, mainly due to its support for different image formats. However, there are medical imaging modalities (e.g. endoscopy, ultrasound), with video output formats that are still not supported by ImageJ (e.g. VOB, MPG). With the base package of ImageJ it is possible to open videos in AVI format. For videos in Quicktime Movie format (i.e. MOV and PIC) it is necessary to install additional plugins (e.g., QuickTime Movie Writer, JMF Movie Reader, QuickTime Opener). For other video formats it is always possible to convert the video to a supported format using a third party video converter application.

A video is basically a temporal sequence of images. An average endoscopy produces a five to ten minute video with a frame rate of 50 fps. Of these tens of thousands of images only a few are relevant, thus it is necessary to select and extract the relevant images to be analyzed / processed in ImageJ.

In this paper, we present an ImageJ plugin developed to select and extract frames from video in diverse formats (e.g. MOV, AVI, VOB, MPG, MP4, FLV, MKV). Its user interface allows for video viewing and browsing. During video visualization it is possible to grab frames and export them as images or an Image Stack to the ImageJ workspace. This plugin, entitled “Multi-format Video Frame Grabber - MVFG” was developed using the vlcj framework (a Java framework for the vlc media player).

Keywords

ImageJ Plugin, Frame Grabbing, Multi Format Video

Short CV

Currently she is researcher at University of Minho in the Life and Health Sciences Research Institute of the School of Health Sciences, in association with the Informatics Department of the School of Engineering. Her research interests include Medical Imaging and Computer Aided Diagnosis. She is particularly interested in developing systems to aid in quality and efficiency of the endoscopic production process. The plugin “Multi-format Video Frame Grabber ImageJ Plugin - MVFG” was developed in order to help the physicians to grab the main images of an endoscopy video for further processing. In this work she was responsible for specification and assessment.
Administrative data

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