TRON Manual
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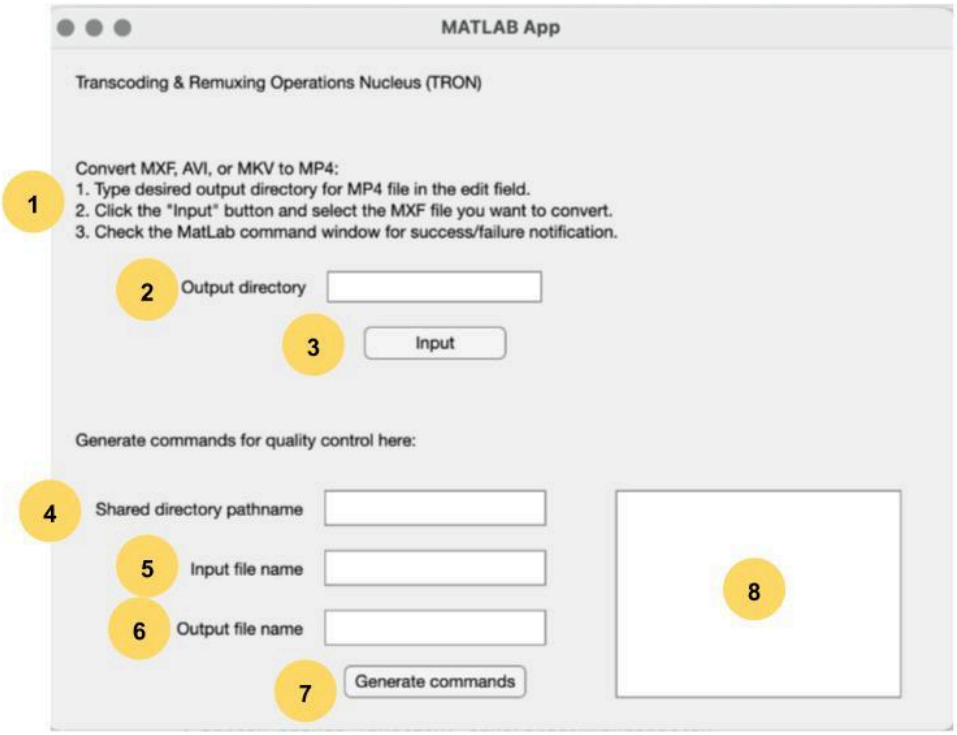
The Transcoding & Remuxing Operations Nucleus (TRON) is an app that streamlines video conversion and quality comparison of converted video files in a GUI. TRON uses the FFmpeg toolbox in MatLab to: 1) convert .mxf, .avi, and .mkv files to .mp4 files, and 2) generate commands that can be copied and pasted into the terminal window to compare the quality of a converted video file against the original video file.



How to use TRON:

1. Open the app.
    a. By double-clicking the tron.mlapp file, you can open the app directly.
    b. If the app doesn't open when the tron.mlapp file is double-clicked, open MatLab and type "cd [pathname of folder where tron.mlapp is located]" in the command line. Press return. The files in the folder you indicated should appear in the bar on the left side of the MatLab command. Double-click on tron.mlapp to open the file in the MatLab app designer space. Once the file is open in the app designer, click on the green play button ("Run") along the top of the app designer window toward the right to open TRON.

2. To convert a video file from one format to another:
    a. Use the brief instructions in the app (#1 in the figure above) for quick guidance.
    b. In the "Output directory" field (#2 in the figure above), type the pathname of the folder you want your converted file to appear in. It is necessary to include a forwardslash on the end. The converted file will save as "output.mp4" in the folder you specify. Make sure there are no other files with the name "output.mp4" in that folder, or TRON will overwrite them!
    c. Click the "Input" button (#3 in the figure above) to select your input file. Your input file does not have to be in your specific output directory. Use the popup window to select your input video file (.mxf, .avi, or .mkv). Once the file is selected, TRON will convert it immediately.
    d. Check the MatLab command line for updates about the progress of the video conversion. If the video conversion fails, the command line will display a "Conversion failed" message. If the video conversion is successful, the command line will display the following message: "Conversion completed. Look for 'output.mp4' in the output directory you specified."
    e. Verify that "output.mp4" has been created and matches your input video.
3. To generate terminal commands to check the quality of a converted video against the original file:
    a. Gather both the original file and the converted file in the same folder anywhere on the computer. Type the name of that shared folder in the "Shared directory pathname" filed (#4 in the figure above). It is necessary to include a forwardslash on the end.
    b. Type the name of the original video file in the "Input file name" field (#5 in the figure above).
    c. Type the name of the converted video file in the "Output file name" field (#6 in the figure above).
    d. Click "Generate commands" (#7 in the figure above) to generate 2 commands in the blank text field on the right side of the app (#8 in the figure above).
    e. Open the terminal window.
    f. Copy and paste the first command in the TRON text field (#8 in the figure above) into the terminal window. Press return.
    g. When the prompt reappears, copy and paste the second command in the TRON text field (#8 in the figure above) into the terminal window. Press return. This command will overlay the original and converted video files with a green filter. Any discrepancies between the two videos will appear as pixels a lighter shade of green than the surrounding pixels. If the screen suddenly washes out in light green, one of the video files is corrupted at that point. You may need to convert the original file again (step 2 above).