



# Deinterlacer 1.0

## 1. Description

Deinterlacer takes an interlaced QuickTime movie and creates a new movie with the odd and even fields in each frame separated into two frames. The new movie has double the number of frames and twice the frame rate as the initial interlaced movie.

## 2. System Requirements

MacOS 8+, PowerPC, QuickTime 3+ >16MB Free RAM, >>16MB Free Disk Space

## 3. Using Deinterlacer

### 3.1 When To Use Deinterlacer

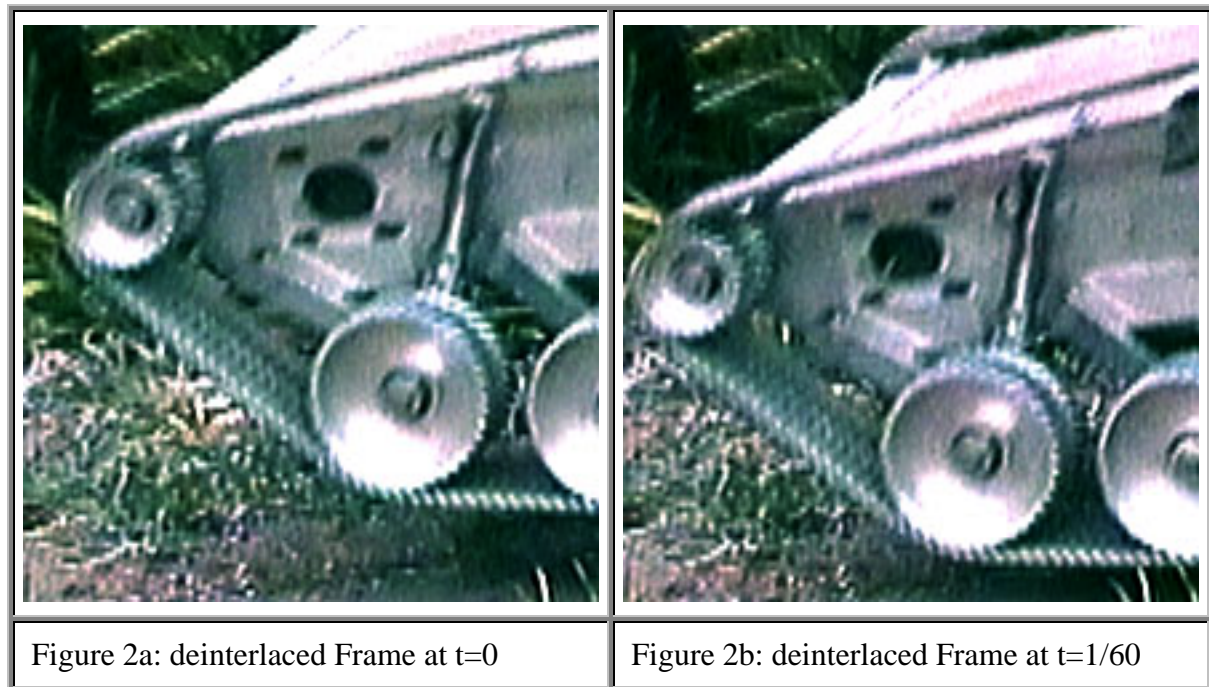
Captured video is only interlaced under some circumstances. Capture of NTSC video at 640 X 480 results in interlaced video, but capture at 320X240 is not usually interlaced.

Interlacing is only a problem in situations with fast motion like shown in Fig. 1. With interlaced video, the first half field contains only the even lines (0,2,4,...) and the second field, that occurs 1/60 of a second later, contains only the odd lines (1,3,5,...). Two images will appear superimposed over each other if the object(s) in the image move between the first and second half of the frame. Deinterlacer separates the first and the second half fields into two separate frames and shown in Fig. 2a and 2b.

If you use Deinterlacer when your video is not interlaced or does not contain fast motion, the interpolation used to fill in the missing odd or even lines of each frame will only degrade your movie.



Figure 1: Interlaced Video Frame



### 3.2 Deinterlacing Movies - Step by Step

1. Open Deinterlacer
2. Select the "Set Compression..." menu item from the "Settings" menu.
3. Use the compression settings dialog to select the compressor and quality for your output movie.
4. Close the compression settings dialog by clicking on the OK button.
5. Choose "Open..." from the "File" menu.
6. Use the Navigation Services dialog to select the files you want to process. Note that you can choose multiple files.
7. Push the "Open" Button in the Navigation Services dialog to start processing.
8. Deinterlacer will now start processing the selected files and create a new for each input file. The new files will be in the same folder as the input files with a '-D' appended to the end of the file.
9. During processing, you can select additional files, cancel a current file being processed or cancel all selected unprocessed files.

Note the preview window can be resized, zoomed, rolled up, or closed. Use the Set Defaults menu item from the Settings menu to restore the original settings.

### **3.3 Balloon Help**

Deinterlacer employs Balloon help to explain the function of controls in the various dialog boxes. Enable Balloon help by selecting Show Balloons in the Help Menu. Then move the mouse over the control in question and a Balloon will appear with text describing the function. Turn Balloon Help off in the Help menu with Hide Balloons.

### **3.4 Theory of Operation**

Deinterlacer starts by making a Flattened copy of the input movie. This brings all the movie data together in one file called "Deinterlacer Temporary File", which resides in the input movie's folder. The new movie's time scale is doubled to allow tracks to be played with enough time resolution to see each frame.

Then, each video track is replaced with a deinterlaced track. To create the deinterlaced track, Deinterlacer processes each frame of the input movie, converting the input frame into two separate frames. Pixels in each frame are processed as shown in Fig. 3. The colors in the figure represent the different processing that occurs for each row of pixels. Each of the red, blue, green and alpha channels are processed identically, so the processing shown in the figure is repeated four times. Note T in the figure is the frame period of the input movie. Next, the time scale for the replaced track is doubled, which results in a double the frame rate.

Finally, the "Deinterlacer Temporary File" is Flattened into the new file with the '-D' extension. This removes the original track media, leaving only the deinterlaced data.

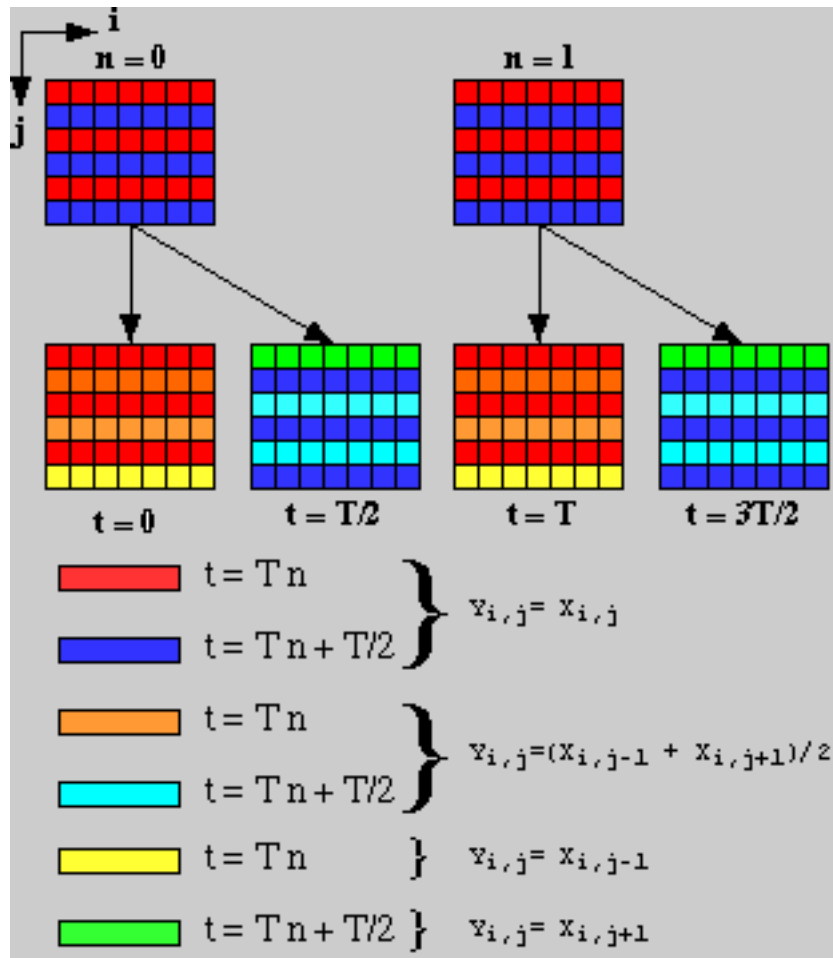


Figure 3: Frame Deinterlacing

## 4. Important Issues

### 4.1. Input Movie Compression

Lossy compression settings for the input movie may mix the odd and even fields of video. When this occurs, Deinterlacer will not be able to completely separate the two fields resulting in significant degradation of the image. Therefore, make sure that you use lossless compression settings on your source movies.

### 4.2 Disk Space Requirements

Deinterlacer requires space for the Temporary file and the final file. The Temporary file contains both the original movie and the compressed deinterlaced video. This means that Deinterlacer requires enough room for the input file plus two times the output file size.

### 4.3 Memory Requirements

The default allocation set for Deinterlacer is enough to process a 640X480 movie with a very large preview window. For larger movies, Deinterlacer may require more memory. Increase the memory allocation if you get an out-of-memory error while processing the movie.

#### **4.4 Sound and UserData**

Deinterlacer will preserve the Sound track and Movie UserData. The UserData associated with the video media will be discarded.

#### **4.5 Last Video Frame**

Deinterlacer retains the original length of tracks it processes so the complete movie will play as expected. To keep the original track length, the last frame of a processed track will not be present in the movie.

#### **4.6 Tracks with Special Effects**

Some types of video tracks with special effects can't be processed by Deinterlacer. If this type of track is found, an error will be generated.

#### **4.7 Errors while Processing**

If an error occurs, Deinterlacer will try to finish processing the movie file. This may cause an incomplete output movie to be generated. Additionally, all movies in the processing queue will be removed and need to be reselected to finish their processing.

#### **4.8 Apple Script**

Deinterlacer has the ability accept Apple Events to cause it to open movies and process them. The Apple Script Editor can be used to record a sequence from Deinterlacer. A simple Apple Script to open a file looks like the following:

```
tell application "Deinterlacer"
activate
open {file "Your Disk:Your Folder:Your Input File"}
end tell
```

### **5. Registering Deinterlacer and Licensing**

Please register Deinterlacer!!!

You can register on-line by clicking on a Payment Service link under Getting Deinterlacer on the Deinterlacer web page at:

[www.iknowsystems/DeinterlacerPage/Deinterlacer.html](http://www.iknowsystems/DeinterlacerPage/Deinterlacer.html)

You will get a registration number and a user name to enter in the Register dialog box. We e-mail you the registration number as quickly as possible but it may take up to 7 days to process your order after we receive it.

*Deinterlacer is the property of Integrated Knowledge Systems and you may not distribute it without the written consent of Integrated Knowledge Systems.*

## **6. Important Warnings**

Always remember you use this software at your own risk. You need to expect that strange things can happen. We take no responsibility for any damage that Deinterlacer or its associated programs can cause. Common sense dictates that you should not use this program for any life sustaining purposes or where any behavior of this program may cause unacceptable results. The user of this software takes all responsibility for anything that might happen. To summarize, we are not responsible for what this software might or might not do.

As a general practice, you need to make sure you back up all your data.

## **7. Acknowledgements**

Deinterlacer contains the following contributed components:

CPrefs and CSoftReg are ©1997 by Keith R. Lawson

ABalloon is ©1998 by James W. Walker.

StStandardError is ©1997 by SimplisticSolutions

SolarPanel is ©1998-1999 by Gabriele de Simone

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## **8. Contacting Us**

Visit our web page at: [www.iknowsystems.com](http://www.iknowsystems.com)

There you should be able to find links to a page that contains the latest version of Deinterlacer and additional information about Deinterlacer.

If you have any technical problems with or comments about Deinterlacer, contact us at:  
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If you have comments or problems regarding the purchase of Deinterlacer, contact us at:  
[iks@iknowsystems.com](mailto:iks@iknowsystems.com)

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