

Archiving digital images and more in your dental practice

A review of clever software to make image management and education easier

By Professor Laurence J. Walsh



“Being able to easily access intraoral camera and x-ray images readily is becoming increasingly important....”

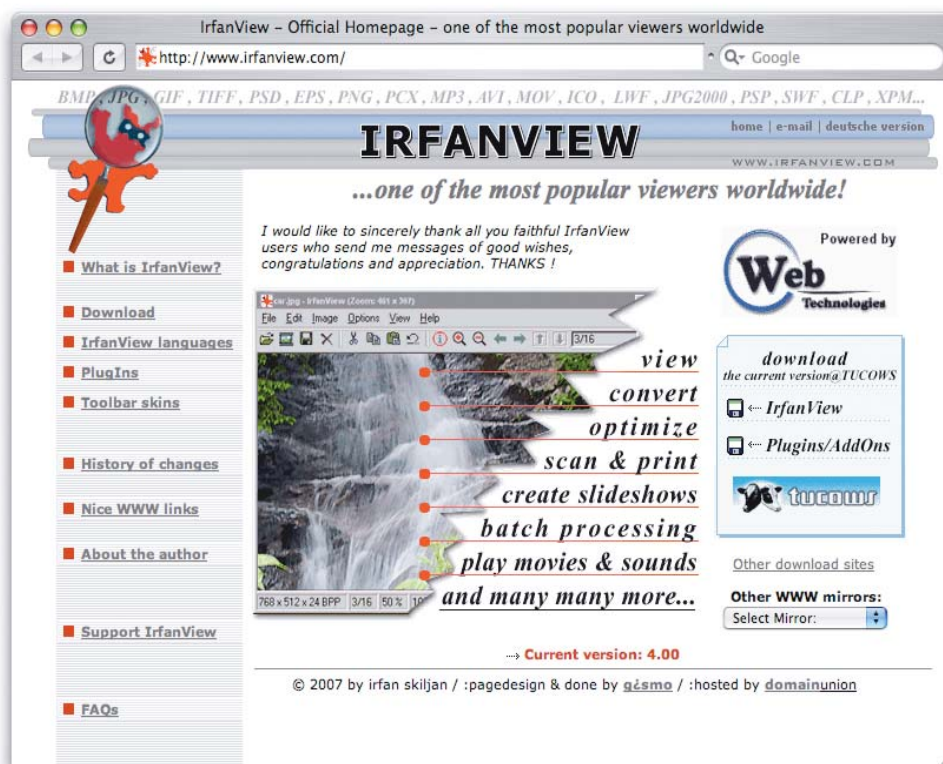


Figure 1. The main website for Irfanview has links to a number of freeware and mirror sites for downloading the main program and the plugins.

With the widespread use of digital cameras for clinical imaging and the increasing popularity of digital radiography in clinical practice, the challenge of being able to access images readily becomes increasingly important. This short article outlines three popular software programs suitable for the Windows® platform which greatly facilitate digital image management - of which two are freeware!

Irfanview

Irfanview (named after its author, Irfan Skiljan from Austria) has been, for several years, one of the most popular freeware downloads on the internet with more than one million downloads per month since 2003. The antithesis of modern software (bloatware), it is based on the concept of smart programming with minimal code. This extremely small program, which can comfortably fit on an old 3.5 inch floppy disk (just over 1 megabyte) offers impressive versatility in image management and with the addition of plugins, the ability to handle a broad range of multi-media files of various types. Irfanview can be downloaded from a number of freeware sites, and

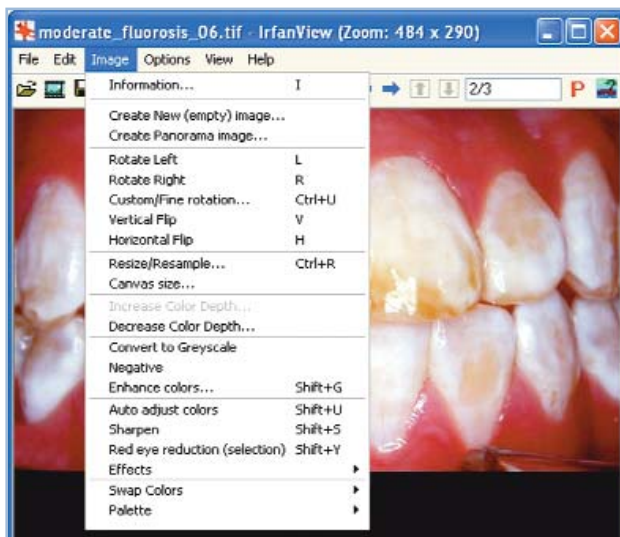


Figure 2. This screen capture shows some of the main image manipulation tools. The “Auto adjust colours” feature was added in version 3.99 and works very well in most cases.

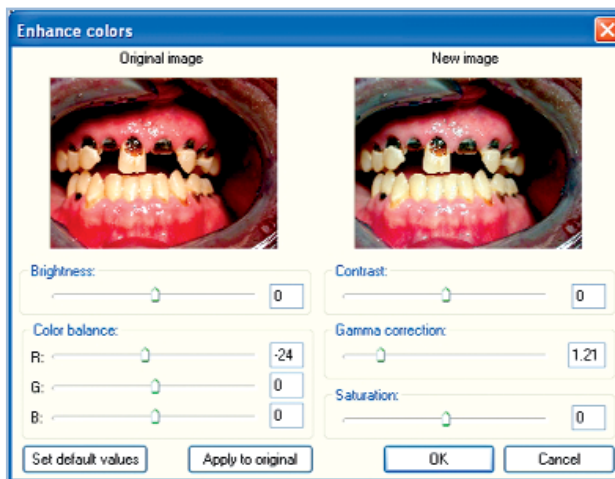


Figure 3. The most common colour enhancing tools allow independent adjustment of colour balance, gamma and saturation, as well as brightness and contrast. The preview window allows the effects to be seen before committing. Even after that point, changes can be undone (1 level of “undo”).

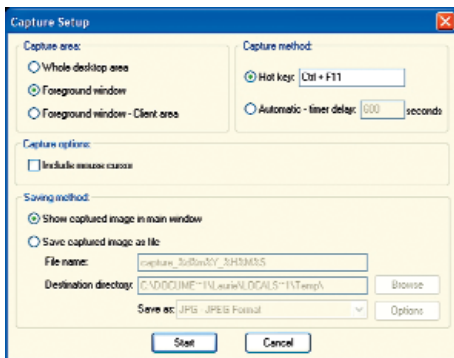


Figure 4. The screen still image capture facility is simple to use. Hot keys can be set, or a timer used to record at preset intervals.



Figure 5. A proof sheet can be created with varying numbers of columns and rows. Image file names are automatically included.

these are linked to from the main web site for the program www.irfanview.com (Figure 1). The program is fully functional and there are no intrusive advertisements or other distractions. It is unusual to find a simple, intuitive program which is also amazingly small in size and free of intrusions or the requirement to update itself on a regular basis. More recent versions can be installed directly over the top of previous versions, without needing to uninstall older versions. The program comes in two parts - the main download (1.013 megabytes), and an optional series of plugins (5.44 megabytes). Many users will not need the plugins, as all commonly used features are included in the standard installation.

The image manipulation properties of Irfanview have been improved greatly in recent software releases and the current version (3.99) offers a number of useful features, such as fine image rotation, automatic level adjustment, and the creation of pages of thumbnails which can be printed to act as a catalogue of existing clinical images.

Irfanview can open image files of practically any type. Using very simple tools, colour levels, contrast and gamma can be readily adjusted and improved (Figures 2 and 3). An important additional feature of Irfanview is its ability to use plugins from Adobe Photoshop, many of which can be also downloaded for free from websites. This is useful for adding in special effects. Other useful features of Irfanview are its ability to undertake screen captures using simple hot keys (Figure 4), and to convert a series of images into an executable

file or a screensaver. In a dental practice, the obvious use of these are to create a custom-made screensaver with images and logos from the practice, and to have a running “kiosk” of images displayed on an LCD screen in the waiting room, for example.

With the proliferation of digital cameras for clinical practice, finding the correct image can prove a challenge. The thumbnail feature of Irfanview allows browsing of directories of images and the assembling of selected images into composites of various types. Creating pages of thumbnail images is a particularly useful feature and the user has full control as to the number of thumbnails per page. Some users find printed pages of image thumbnails are a useful way of locating a particular image (Figure 5). This tool is also very useful for preparing image montages such as for case presentations, where you want to assemble all images from a particular patient. These case presentations are becoming increasingly important for special stream fellowships and membership of the RACDS, as well as for those undertaking postgraduate programs.

New versions of Irfanview are made available on a rolling basis throughout the year and the documentation of the program in terms of additional capabilities offered is comprehensive.

Irfanview is compatible with all versions of Windows including Vista. Users of the Linux, Unix and Macintosh platforms can, in the most recent versions of their operating systems, run software emulations of the Windows platform, and through this means can access the capabilities of Irfanview.

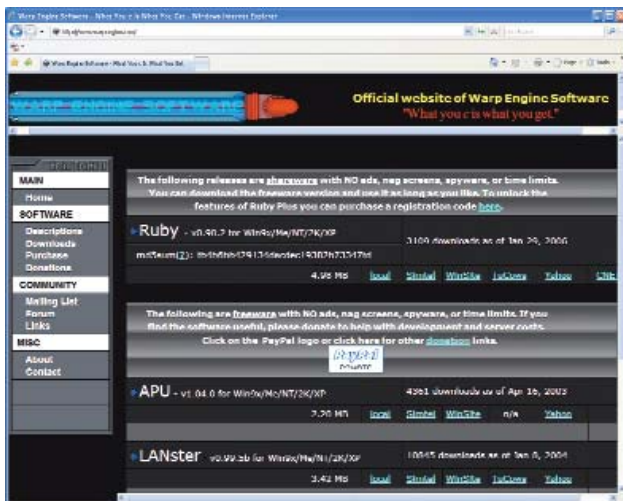


Figure 6. The download site for Ruby has links to a number of mirror sites.



Figure 7. The download site for Camtasia Studio has an extensive series of video tutorials (themselves created using Camtasia) which give a feel for what the program can do.

Ruby

A second useful freeware program for Windows users is Ruby, from Warp Engine Software (<http://www.warpengine.com>). Many practitioners who use CDs and DVDs for archiving purposes would have accumulated a large collection of these, and the tedious process of searching through a wallet of 96 discs is completely unnecessary if one is using an intelligent indexing database program for data stored on CD-ROMs and other removable media (Figure 6). The need to be able to find which disc contains the relevant data file has increased dramatically. By using a simple system of labeling these archived CDs and DVDs, an archiving database allows you to rapidly find which disc a file may be stored on. Ruby uses an accumulating database which lists every file on the disc. By entering key information such as part of the file name in the query function, it will identify which folder on which disc the desired file resides in. Where it is present on multiple discs, then a sequential listing of the discs will be provided. The searching speed is so much faster than the Windows search tool or Google desktop that these will rapidly become a distant memory. Ruby is freeware, with no advertisements, nag screens or time limits. The current version is 0.90.2, and download size is 4.98 megabytes.

Many clinicians file their digital images of patients into folders with the patient's name. In such a case, when these are

backed up to an optical disk, entering the patient's surname (or part thereof) will readily retrieve the identification of the disc on which these images are found.

To build the database, the process of searching and archiving a disc takes only a matter of seconds, and the Ruby data framework allows for multiple datasets, for example, a dataset from the "office" and another dataset from "home". The database files which are created by Ruby are relatively small, and are themselves easily backed-up.

Camtasia Studio

A final software suggestion relates to those situations where it is necessary to capture in a movie format, a whole series of screen activities. This could range from a Powerpoint presentation for a lecture, through to a series of mouse clicks showing a new associate how to, for example, use the finer points of CAD/CAM software, through to staff training in the correct sequence of mouse clicks for activating accounting or dental software programs.

Often where an experienced member of staff is showing a "recent recruit" to the practice how to use particular aspects of software, things seem to happen at a great speed and the learner is often overwhelmed. If only the words spoken, keystrokes and mouse movements could be recorded simultaneously so that the verbal and visual information is kept completely intact. This

task is now easily handled with screen capture software which incorporates motion and an audio recording channel. The audio input can be from a simple headset microphone, which gives consistency without fading, and without interfering with the ability to work on a keyboard.

The author uses and would recommend for this purpose "Camtasia Studio" (<http://www.techsmith.com>), an elegant software suite which allows still and motion image capture at high resolution into a range of formats suitable for viewing on both Windows and Macintosh platforms, with DVD production tools included (Figure 7). In fact, Camtasia is already used to produce a range of commercial software training packages, ranging from DVDs through to streamed video and podcasts. A fully functional non-restricted 30-day version can be downloaded. The program can be purchased online and a software key emailed which will then make the software fully functional after the 30 day initial period has expired. The current version (4.0) handles screen recording and presentation with consummate ease.

About the author

Professor Laurence J. Walsh is the technology editor of *Australasian Dental Practice* magazine. He is also a noted commentator on and user of new technologies and is the Head of The University of Queensland School of Dentistry.