

Beginning Photo Retouching and Restoration Using GIMP

**Learn to Retouch and Restore
Your Photos like a Pro**

Second Edition

Phillip Whitt

Apress®

Beginning Photo Retouching and Restoration Using GIMP: Learn to Retouch and Restore Your Photos like a Pro

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Any source code or other supplementary material referenced by the author in this book is available to readers on the Github repository: <https://github.com/Apress/Beginning-Photo-Retouching-and-Restoration-Using-GIMP>. For more detailed information, please visit <http://www.apress.com/source-code>.

Printed on acid-free paper

This book is dedicated to my supportive family and friends.

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About the Author



Phillip Whitt has been a photo retouching professional since the year 2000. Over the years, Phillip has served many photographers, photo labs, and the general public, restoring and editing countless images. He also offered film-to-video transfer services for a number of years, helping people preserve precious family memories.

Prior to that, he spent the late 1980s and much of the 1990s as the advertising manager of a medium-sized hardware/home center.

Much of his work required learning graphic design and working with images. This led to him eventually becoming proficient in programs such as Adobe PageMaker (which was replaced by InDesign long ago) and Photoshop.

Since 2014, Phillip has authored several books and produced several video courses for Apress Publishing pertaining to image editing.

About the Technical Reviewer



Massimo Nardone has more than 22 years of experience in security, web and mobile development, cloud, and IT architecture. His true IT passions are security and Android.

He has been programming and teaching how to program with Android, Perl, PHP, Java, VB, Python, C/C++, and MySQL for more than 20 years.

He holds a master of science degree in computing science from the University of Salerno, Italy.

He has worked as a project manager, software engineer, research engineer, chief security architect, information security manager, PCI/SCADA auditor, and senior lead IT security/cloud/SCADA architect for many years.

His technical skills include security, Android, cloud, Java, MySQL, Drupal, Cobol, Perl, web and mobile development, MongoDB, D3, Joomla, Couchbase, C/C++, WebGL, Python, Pro Rails, Django CMS, Jekyll, Scratch, etc.

He currently works as Chief Information Security Officer (CISO) for Cargotec Oyj.

He worked as visiting lecturer and supervisor for exercises at the Networking Laboratory of the Helsinki University of Technology (Aalto University). He holds four international patents (PKI, SIP, SAML, and Proxy areas).

Massimo has reviewed more than 40 IT books for different publishing companies, and he is the coauthor of *Pro Android Games* (Apress, 2015).

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Introduction

The Joy of Restoring Photos

When you look through your family photo album, chances are you'll notice that some of those pictures are showing their age. They might have faded, lost a great deal of color, or have stains, tears, or other forms of damage. There may be only one picture of a favorite aunt or uncle in existence, possibly in poor condition. If you have photos that are precious to you, you know how important it is to rescue and preserve them for posterity (Figure 1).



Figure 1. *A faded image rescued for future generations (Image courtesy of Bruce Bundt)*

INTRODUCTION

With the advent of digital imaging software, it's now possible to perform minor miracles and revive damaged photographs that might have been considered beyond repair. In this profession, there's nothing more gratifying than the look of surprise and joy on a client's face as they gaze upon a fresh, new copy of a restored family photo for the first time. Sometimes, the client is moved to tears, which reiterates how important family photographs are. Most of us in the photo retouching and restoration profession love what we do. I personally find it very therapeutic—even when wrestling with some of the more challenging jobs that come my way. Learning these skills is a plus for photographers who want to add an extra revenue stream to their business. Genealogists can greatly benefit from knowing how to digitally resurrect images from generations past. The family archivist will have fun preserving the history of mom and dad, as well as an assortment of cousins, aunts, and uncles.

Why Photographs Are Important

Our old family photographs go largely unnoticed in our day-to-day lives. They are tucked away in aging photo albums (Figure 2), displayed in frames (often exposed to damaging light), or stored in drawers and boxes. Improper storage and exposure to UV light cause the majority of damage to photographs.



Figure 2. *Photographs kept in an aging album*

Our photographs are linked to our history. The fact is we often don't give them much thought until a milestone anniversary or birthday arrives, a loved one passes on, or other significant events occur. Throughout my career, I've had many desperate clients hire me to restore their treasured images for all of these occasions.

Preventing damage is always preferable to repairing it. Keeping photos in acid-free albums, displaying them in frames with UV-resistant glass, and keeping them out of junk drawers and boxes will go a long way toward preserving your images. It's also important to digitize them, so copies can be given to family members. Those images of our parents, grandparents, kids—even distant relatives—are part of our heritage and well worth preserving. It would be a shame if our visual family history couldn't be passed on to future generations. Fortunately, with the aid of this book, and the image-editing power of GIMP 2.10, you'll be able to rescue all of the damaged images in your family's collection, as well as those of your clients, if you choose to make a profession out of this fun and challenging activity.

GIMP: The Powerful Free Image-Editing Alternative

Years ago, there weren't many options available for full-featured photo-editing programs. Adobe Photoshop was by far the most powerful—and the most expensive. While it is still considered the leading photo-editing software, there are other options that have narrowed the gap over the years.

One of the most powerful free photo editors is the open source *GIMP* (currently in version 2.10.32).

GIMP stands for *GNU Image Manipulation Program*. The best part about it (other than being free) is that you can share it with friends and install it on multiple computers—all without fear of committing piracy or violating licensing agreements. It is issued under the terms of the GPL, which stands for *General Public License*. Photoshop is probably *the* most pirated software on earth. With GIMP, that isn't possible. The developers *encourage* you to distribute copies (and yes, it says so on their website).

Open source software such as GIMP means that the source code is openly available. Anyone with programming skills can make improvements and enhancements. There is a large community of GIMP users that contribute to its ongoing development and improvement. Over the years, GIMP has matured into a powerful tool used by many independent photographers, graphic designers, and artists who require a full-featured image editor.

In May 2013, Adobe Systems, Inc., changed to a subscription-only business model. It no longer sells physical boxed software packages or downloads with perpetual licenses. Adobe customers must pay a monthly fee to use the company's current products on a continual basis. This apparently angered many of Adobe's customers, many of whom began seeking alternatives to Adobe products, especially Photoshop. There was a

dramatic increase in the download frequency of GIMP in the months that followed Adobe's decision. It would be reasonable to assume that GIMP will become more popular over time, as it keeps improving.

Although GIMP lacks some of Photoshop's features, it's still an extremely capable editor for photo retouching and restoration tasks. There are plug-ins available that can restore some of the missing features, so GIMP will become more on par with Photoshop.

To download the software and access the documentation and license, visit the official website at www.gimp.org. GIMP can be installed on Windows, Macintosh, Linux, and Unix derivatives. The website will help direct you to the correct installer (or source code) for your system.

Even though this book is a beginner's guide to photo retouching and restoration, it's not a beginner's guide to GIMP. For the benefit of those new to GIMP, Chapter 1 is an overview of some of this software's important features. It should provide beginners with enough information to follow the tutorials, but the GIMP User Manual will provide much more specific information about the software itself.

If you're a complete beginner, consider my book *Practical Glimpse* (also by Apress Publishing). Glimpse is a *fork* of GIMP (essentially meaning it has its own team of developers). With the exception of only a couple of minor things, Glimpse is identical to GIMP, so the information in the book is applicable.

The retouching and restoration techniques in this book can be replicated by other programs, such as Adobe Photoshop and Corel PaintShop Pro. However, some of the tool names and command names will differ.

If you've been eager to learn photo retouching and restoration without the high price tag that accompanies Photoshop, I encourage you to get started with GIMP 2.10. You can download the practice photos with which to follow along in each lesson.

INTRODUCTION

This book will teach you how to do the following:

- Acquire the best scans and digitize oversized photos
- Improve contrast to make faded photos look their best
- Correct exposure problems
- Make color corrections in photos that have color shifts or color casts
- Colorize black-and-white photos
- Digitally clean up dust on photos (great for scanned images acquired from old 35mm slides or negatives)
- Repair images with tears, cracks, and stains
- Remove unwanted objects from photos
- Recompose portraits (add or remove people, change backgrounds, or make other changes)
- Digitally remove skin blemishes, whiten teeth, etc.
- Protect and preserve your restored images

Visualizing the Editing Steps

It will be beneficial to evaluate each photo and visualize your steps from start to finish. This may be a little challenging in the beginning, but it gets easier with practice. Outlined in the following is the progression of an image restoration that should serve as a general guide:

1. *Straighten the image*: Sometimes, the image you are working with will be tilted slightly. GIMP can easily correct this. You can see in the example (Figure 3, right-hand-side example) that the porch has been straightened. Now the edges are at an angle and will have to be cropped.

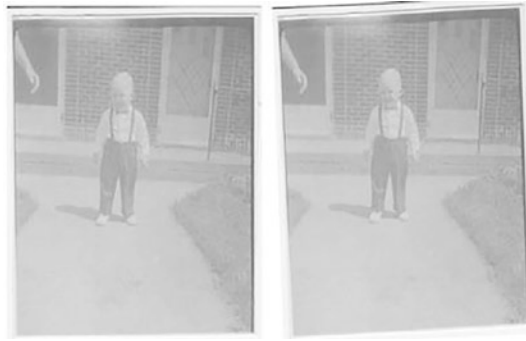


Figure 3. *The image straightened*

2. *Crop the photo:* In the next example (Figure 4), I cropped the image to the client's specifications. Photos from the 1950s were often square, and cropping eliminates the excess foreground.
3. *Make the necessary exposure and contrast adjustments:* By using a combination of layers set with the *Multiply* and *Overlay* blending modes, the photo has much better contrast and brightness (Figure 4, right-hand-side example). When editing color images, make the needed color adjustments after exposure corrections.



Figure 4. *Image cropped (left) and contrast improved (right)*

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4. *Do your digital cleanup/editing:* Remove scratches, spots, blemishes, and any distracting elements. After editing, recheck the exposure and contrast. In color photos, recheck the color correction.
5. *Recheck the photo for overlooked dust, blemishes, etc.:* Give the photo a final overview, to make sure you removed all of the imperfections that might have been overlooked the first time. Once you're satisfied with the outcome, it is finished. Be sure to save a layered version of your work. (I'll explain this in greater detail in the section "Working with Layers" in Chapter 1.)
6. *Resize the image:* Resize the photo to its final output size.
7. *Sharpen the photo:* Last, sharpen the image slightly. The end result looks much better (Figure 5).



Figure 5. *Before and after comparison*

Note This process will vary somewhat, depending on the image and the editing requirements. For example, it's better to repair images with heavy damage (large cracks, tears, or missing areas, in which large patches of underlying white from missing image emulsion are visible) before making tonal and/or color corrections.

Improving with Practice

The tutorials in this book will help you learn a great deal about photo retouching and restoration. Mastering the lessons in this book will help you along the way to becoming an expert retouch or restoration artist, and with *dedicated* practice, you will become one. This is especially important if you plan to become a professional retoucher and restorer. Top-notch work that exceeds your clients' expectations will make them very happy, which can promote glowing word-of-mouth testimony leading to potential clients.

You'll discover that some restoration work requires experimentation with different approaches, before you achieve the results you want. You won't achieve perfect results with every image; some will be too far damaged, and making the best attempt you can make will have to suffice. In most cases, you can still achieve pleasing results!

As mentioned earlier, if you are going to professionally restore and retouch photographs, skillful work will thrill your customers. That's why improving and maintaining your skill level is vital. There will be the occasional hard-to-please client, and there will be times when revising work will be necessary. While it's important to keep revisions to a minimum, they can also serve as learning experiences. Many times, I've learned a new and better way of restoring a photo because my first attempt wasn't satisfactory. After the revision, I'd end up with a very happy client—often leading to repeat business.

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After you've spent a great deal of time editing a particularly difficult photo, it helps to leave it alone for a day or so and then reexamine it with a fresh set of eyes. (It also helps to have someone else look at it.) It can be frustrating to print your finished work only to discover it wasn't *quite* finished, because you overlooked something. After mastering the tutorials in this book, you might consider asking family and friends for practice photos. It's a great way to build a portfolio to show prospective clients. Just be sure to ask for permission to use them first—especially if you plan to put them online.

Equipment Purchases to Consider

These days, most people own a computer, scanner, and printer. All-in-one printer/copier/scanners are now quite common. These are the minimum equipment requirements for scanning, editing, and printing photographs up to 8" × 10". For many people, this will probably be sufficient. For those editing images at the serious amateur level or offering a professional service, there are a few other items to consider. They will make your workflow smoother and more efficient and will also enable you to handle a wider range of editing tasks. If you're a professional, you probably already have this equipment. If not, you might consider obtaining these:

- A *multiformat flatbed scanner* (Figure 6): Using a multiformat photo-quality scanner will capture images with a wide dynamic range (greater detail in shadow areas), as well as transparencies, such as 35mm slides and negatives. They typically range in price from about \$100 for basic models to as much as \$1200 for models that can scan 12–16 slides at one time.

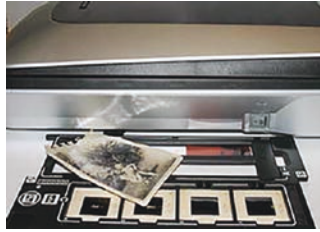


Figure 6. *A multiformat flatbed scanner*

- *A good quality tripod:* You may encounter large images, such as 16" × 20" portraits. With a tripod and a good camera, you can digitize large images for editing. A decent consumer-quality camera will work, but a camera that captures in the RAW format is best. The tripod should have a head that tilts 90 degrees, so that the camera can be aimed straight down.
- *Lighting:* Digitizing large images outside on an overcast day works very well but may not always be possible. You can purchase from your local camera shop lighting equipment to illuminate large images. Photoflood bulbs emit light at 3200 or 3400 degrees Kelvin to work with your camera's indoor setting.
- *Graphics tablet* (Figure 7): A graphics tablet can make your work much easier and faster. It mimics the feel of using a brush, pencil, or pen. This is especially useful when applying colors to an image, such as colorizing a black-and-white photograph.



Figure 7. *A graphics tablet can make your work easier. (Image courtesy of Sasha Kim/Pexels)*

Copy with Caution

If you are learning the art of digital photo restoration for professional purposes, you'll have to be careful when duplicating and editing some images to avoid committing copyright infringement. Because I'm not an attorney, I can't really offer this as specific legal advice, but more as a general cautionary guide for you to keep in mind. *You should always consult an attorney who specializes in intellectual property law for legal specifics.*

On occasion, a customer will request retouching or modifying a professionally shot portrait. Legally, the photographer who took the picture owns the copyright to the image (unless other arrangements were agreed upon beforehand). When possible, have the customer obtain written permission from the photographer or studio that owns the copyright, before proceeding with any work. Naturally, some portraits will be decades old, and the photographer will have passed on or closed their business, or there simply may not be any way of knowing who the photographer is. In those cases, it's probably a moot issue.

It's good practice to have the customer sign a waiver (your attorney can help you draft one) releasing you from any copyright infringement liability. However, if the picture is obviously the work of a professional (especially a local photographer), obtaining permission to edit the image is very important. Photographers can be very protective of their work (trust me, I know), and you can't really blame them. If it happened to get back to them that you were editing their work, a lawsuit might follow. (I personally know of a photo lab owner who was almost sued over just such an incident.)

Many people believe that because they paid for the photography service and prints, they own the copyright to those images. It can sometimes be difficult to convey the concept that the photographer (or studio that employs them) owns the copyright. However, it's important that you do. Customers won't always understand why they need to obtain permission or sign a waiver, but you must legally protect yourself. It's also just professional courtesy to ask for permission to edit someone else's work.

So, be sure to remember these important points:

- When possible, have the customer sign a waiver releasing you from any potential copyright infringement. Most of the images you work with will be family snapshots or an old portrait that was the work of a professional. It may be impossible to identify the photographer.
- When it's obvious that a photo is the work of a professional, obtain permission from the copyright owner to edit the image, if at all possible. There is usually an embossed signature at the bottom-right corner of a photo and a "Do Not Copy" warning on the back.
- *Consult an attorney when you need more specific legal advice.* It pays to be careful.

Macintosh Users

The tutorials in this book use the Windows/Linux keyboard shortcuts, but if you are a Macintosh user unfamiliar with the Windows keyboard shortcuts, the Mac equivalents are shown in Table 1.

Table 1. *Mac/Windows Keyboard Shortcut Equivalents*

Function	Editing	
	Mac OS	Windows
Cut to clipboard	Command + X	Control + X
Copy to clipboard	Command + C	Control + C
Paste from clipboard	Command + V	Control + V
Undo	Command + Z	Control + Z
Contextual menus	Control-click	Right-click

Practice Images

You can download the Practice Images folder that contains the images that accompany each tutorial in this book. The images are contained in each corresponding subfolder. To download the Practice Images folder, download the source code package here: <https://github.com/Apress/Beginning-Photo-Retouching-and-Restoration-Using-GIMP>.

If you’re ready now, you can start on your path to becoming an image retoucher and restoration artist!