

PerfeCaptureMac User's Manual

Version 1.0

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1. Introduction

This manual is a supplement to the xcanex's main user manual. It describes the usage of PerfeCaptureMac, the application software for driving the xcanex bookscanner on a Mac OS X platform (10.8 or later).

For general instructions such as mechanical setup, adjustment of camera or scan pad placement, please refer to these reference materials:

Main user's manual :

<http://www.piqximaging.com/usermanual/XCANEX%20User%20Manual%20English%20ver1.3.pdf>

Tutorial videos :

<http://www.piqximaging.com/quicktips>

Video on mechanical setup :

<https://www.youtube.com/watch?v=QayOg5ahN2U>

2. Launching the PerfeCaptureMac

Connect your xcanex unit to the computer via the supplied USB cable
After the app is installed, double-click "PerfeCaptureMac" in the "Applications" folder to launch it.

Important note:

At the time of its first release, the PerfeCaptureMac may not yet be officially registered as an 'identified developer'.

In this case, PerfeCaptureMac may not be launched and an error message appears which says "PerfeCaptureMac cannot be opened". To allow it to be launched, please follow the steps below:

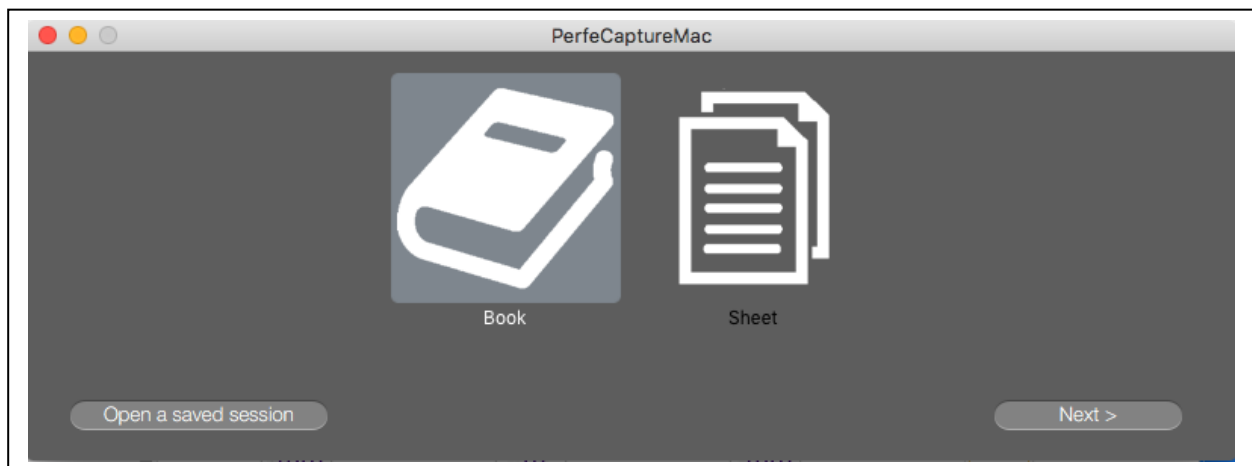
- Click the Apple logo at the top-left corner of the screen and go to 'System Preferences -> Security & Privacy -> General'
- Click the 'lock' icon at the bottom-left corner
- Under 'Allow apps downloaded from', select 'Anywhere'

- PerfeCaptureMac should now be able to run. You only need to launch it once and it will be able to launch every time, regardless of the security setting.
- Set the security settings back to its original setting.

3. Establishing scan sessions

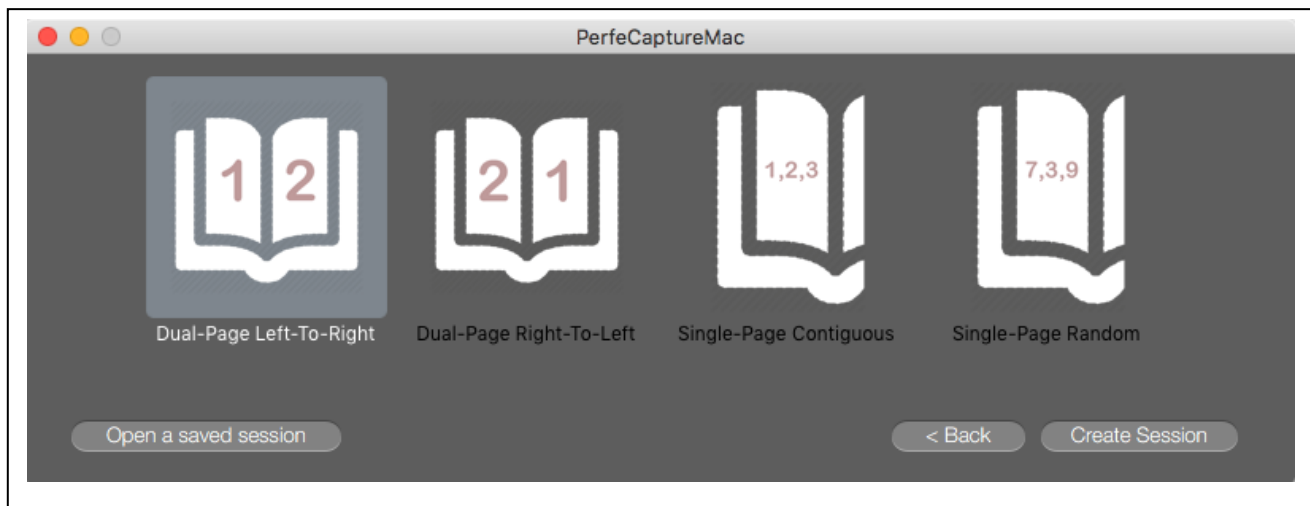
PerfeCaptureMac is a session-based application whereby a specific scan session is to be opened or created before scan. Each session can be saved for future continuation. Immediately after launch, a configuration dialog box will appear.

3.1 Opening a new scan session



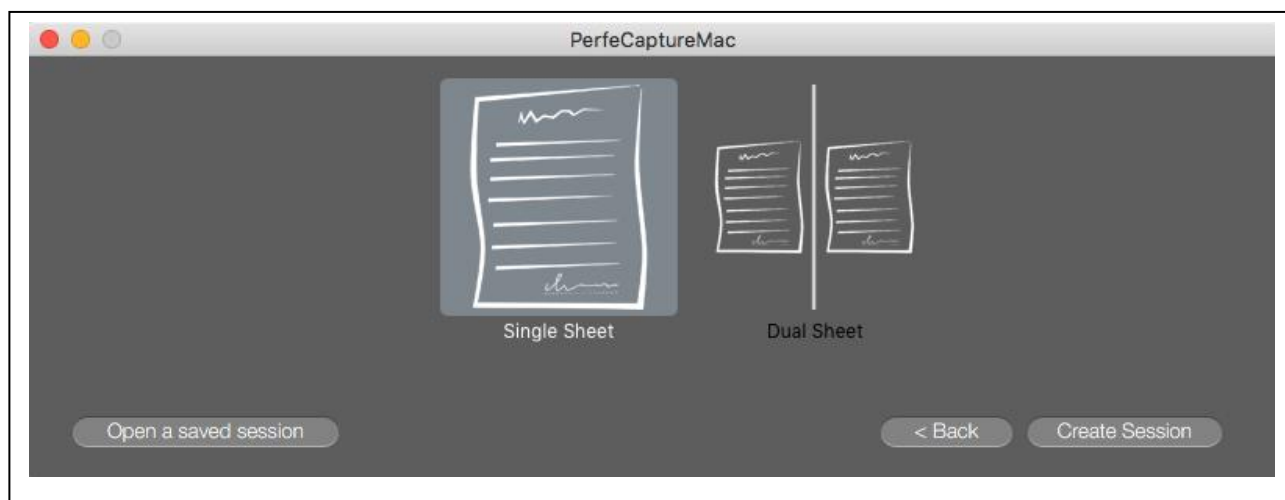
Choose what type of source that you will be scanning by clicking on its respective icon:

- Book – bound pages that requires digital page flattening and page separation
- Sheet – loose pages or cards
- Click 'Next' to proceed



There are 4 configurations for scanning books:

- Dual-page left-to-right – scan 2 pages simultaneously for books beginning on a right page and ending on a left page.
- Dual-page right-to-left – scan 2 pages simultaneously for books beginning on a left page and ending on a right page.
- Single-page contiguous – scan one page at a time in sequential order, without skipping pages.
 - This mode allows you to scan all the left (or right) pages, before scanning the opposite pages.
 - The pages will be automatically re-ordered to the correct sequence.
- Single-page random – scan one page at a time in random order, or from multiple books.
 - No page re-ordering will be done and pages will remain in the same order as when they were scanned.



There are 2 configurations for scanning sheets:

- Single-sheet - Scan a single sheet at a time.
- Dual-sheet - Scan 2 sheets simultaneously, with the left page order preceding the right.

3.2 Opening a previously saved session

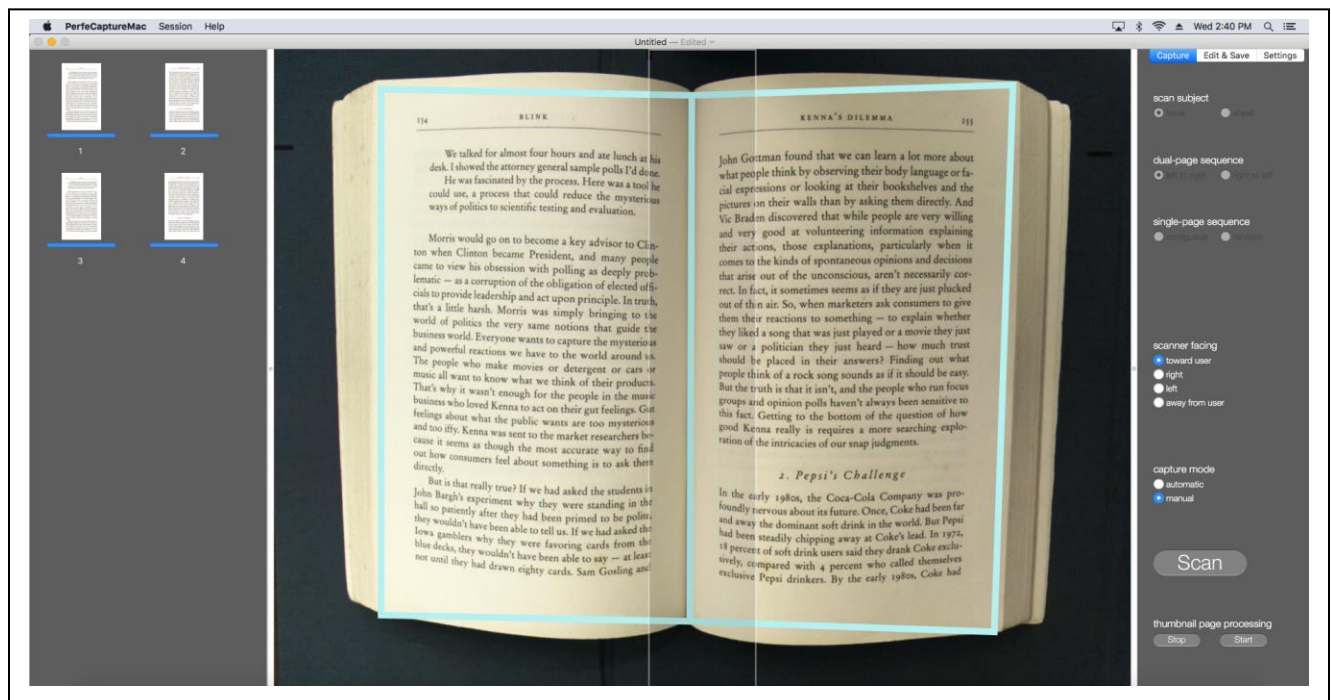
Click the 'Open a previously saved session' button at the bottom-left corner of the configuration dialog.

Select the saved session that you wish to open (in XML text file format) and click 'Open'.

Note: if the saved session has unprocessed pages, you may click the 'Resume image processing' button after the main app window appears. Alternatively, let image processing resume automatically after the first capture.

4. User interface

This section describes the user interface according to each of its function. If you wish to familiarize with the workflow instead, you may first read Chapter 5 (Workflow).



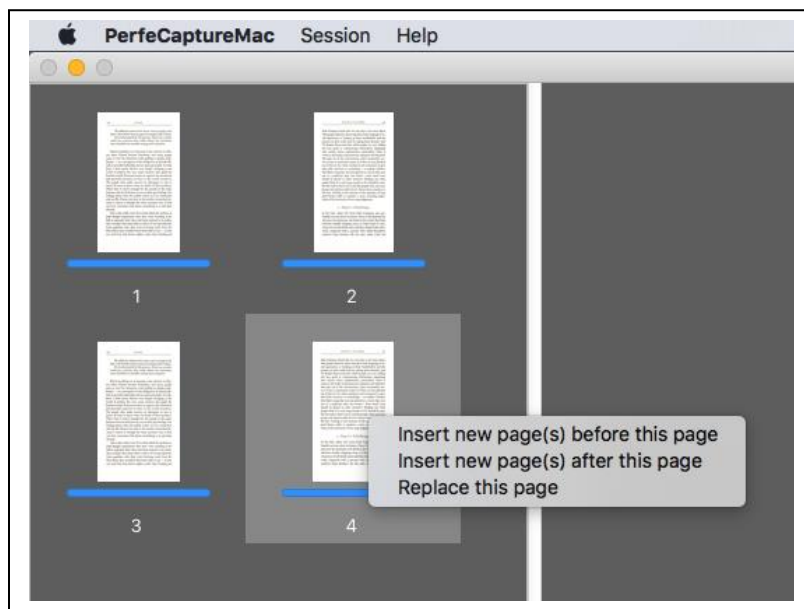
The main application area is divided into 3 main sections:

- Thumbnail panel (left)
- Preview/edit window (center)
- Control panel (right)

4.1 Thumbnail panel

- The thumbnail panel shows every page that was scanned and also indicates the post-processing status of each page.
- To see more pages at one time, the thumbnail panel can be enlarged by dragging the separator in between the thumbnail panel and preview/edit window.

- To scroll the thumbnails, use either the mouse wheel or the up/down key.
- There is an index number and progress bar associated with each thumbnail.
- The progress bar shows the status of the page (processed, not processed, or process in progress).
- The index number shows the relative page order and how the pages will be arranged in the final saved multi-page file.
- A number can be keyed into the index number box to move its associated page to another location.
- To delete a page, select one or more (by holding the 'Command' key) thumbnails and press the keyboard 'Delete' key.



- Right-click on any thumbnail to insert or replace a thumbnail.

4.2 Preview/Edit window (PE Window)

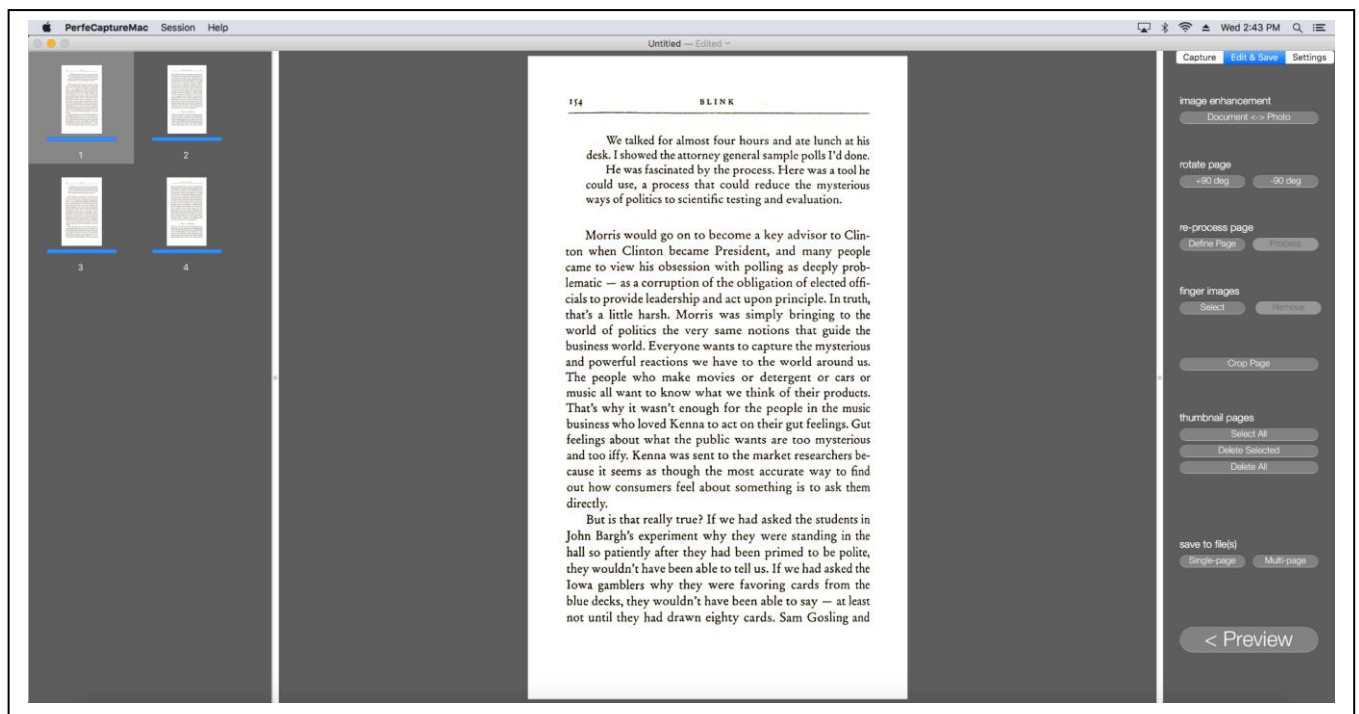
The PE window serves to show the live preview video during capturing and a full-size scanned page during editing.

In Capture mode:

- What is shown in the preview video defines where the scan area is. Make sure any page to be scanned are fully within the scan area.

- When in dual-page mode, 2 white lines will appear at the center of the window with a shaded area in between. This is called the 'Gutter Area'.
- Always place a book with its gutter within the gutter area to enable reliable page detection
- In single-page mode, the gutter area is near the edge of the window to allow scanning of a single page.
- When in auto page detection mode, a green page frame will appear surrounding a page once detection is successful.
- When in automatic capture mode, the page frame will turn red momentarily during capture. Once it turns green, the page can be flipped, replaced or removed.
- When in the manual page detection mode, click on the preview video to define the page corners before scanning.

In Edit mode:

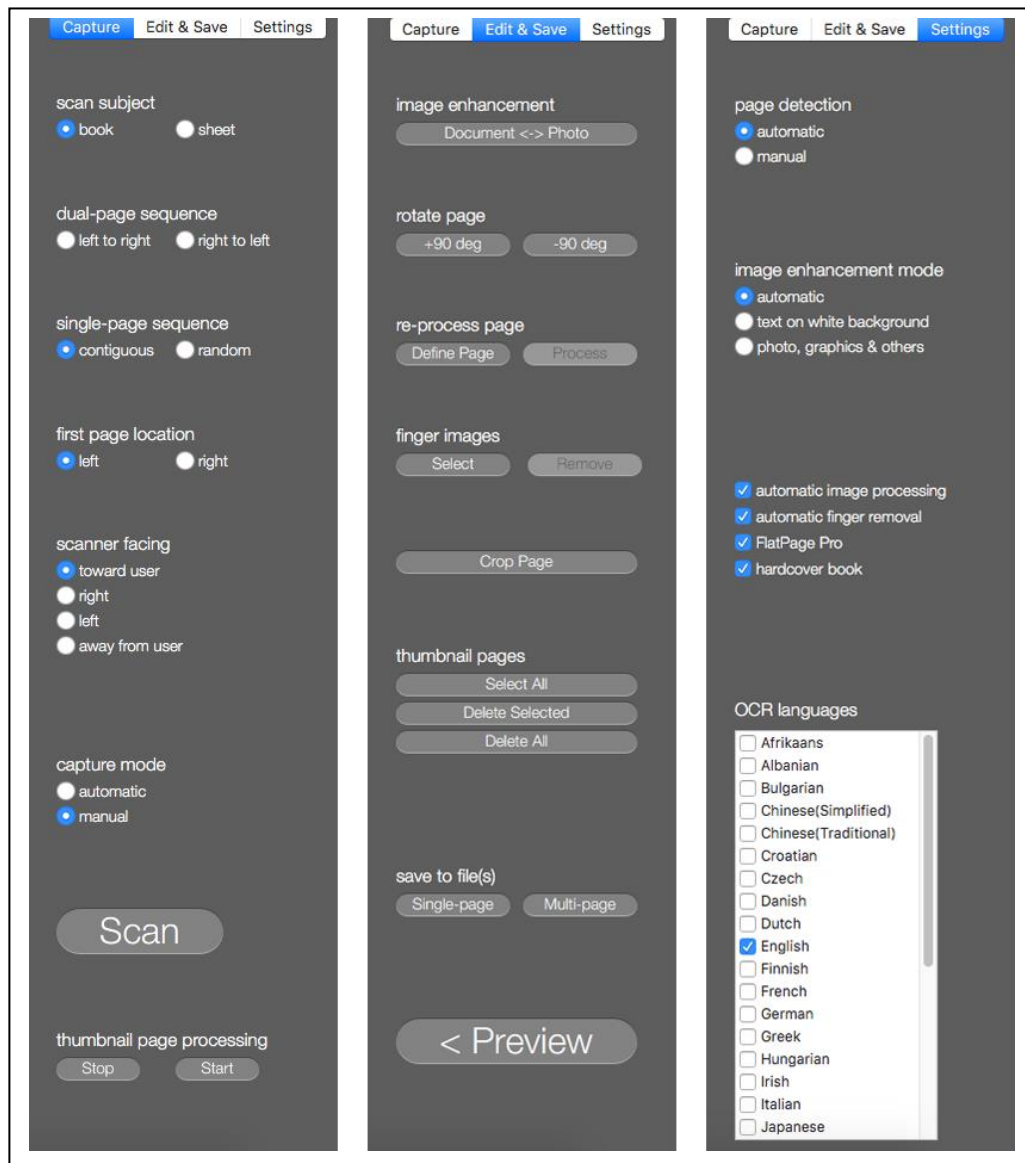


- The full-size scanned page of the selected thumbnail is shown.
- The image can be zoomed by using the mouse wheel.

- To pan the image after zooming, hold the left mouse button and drag.
- To select an area for an operation (e.g. crop), make sure the image is not in zoomed condition, hold the left mouse button and drag.

4.3 Control Panel

The control panel serves to receive all user inputs and display relevant information, and comprises 3 subpanels which can be switched by clicking the tabs at the top. The 3 subpanels are Capture, Edit and Save, and Settings.



The Capture subpanel

- Scan source
 - Book: Scanning bound materials with a gutter.
 - Sheet: Scanning loose sheets or cards.
- Dual-page sequence
 - Capture 2 pages simultaneously when book is equal or smaller than 6 x 9 inches.
 - Left to right: Use this mode to capture books starting on a left page and ends on a right page.
 - Right to left: Use this mode to capture books starting on a right page and ends on a left page.
- Single-page sequence
 - Capture a single page at time when book is larger than 6 x 9 inches.
 - Contiguous pages: To scan whole books or sections without skipping pages. This mode allows scanning of all the left pages followed by all the right pages and vice-versa. Pages will be re-ordered automatically.
 - Random pages: To scan random pages. Page ordering follows the scan sequence.
- First page location (for Single-page contiguous mode only)
 - Left: Select this when the first page of the section is on the left.
 - Right: Select this when the first page of the section is on the right.
- Scanner facing
 - Depending on where the scanner is facing, the preview orientation is automatically changed so that what is shown in the preview video corresponds to user's motion.
- Capture mode
 - Automatic: Scan initiation is automatic when a valid page is present entirely within the scan area with no motion detected.
 - Manual: Manually initiate a scan by pressing the space bar or Capture button.
- Scan: To initiate a capture manually. Alternatively, press the keyboard spacebar.

- Thumbnail page processing
 - Stop: To halt ongoing image processing in case user wishes to save the scan session and close the application.
 - Start: To resume image processing when processing was halted, for example after the loading of a previously saved session.

The Edit and Save subpanel

- Toggle enhancement mode: Toggles the image enhancement method used. in the selected page between text document and pro-photo mode.
- Rotate page
 - +90 deg: To rotate the page 90 degrees in the clockwise direction.
 - -90 deg: To rotate the page 90 degrees in the counter-clockwise direction.
- Re-process page:
 - Define page: To revert to the unprocessed raw image after which users can re-define the corners of a page before re-processing
 - Process: to start re-processing the defined page.
- Finger images
 - Select: Allow users to select finger images to be removed
 - Remove: To remove the finger images selected by user.
- Crop page: crops a page after defining the crop boundary in the edit window.
- Thumbnail pages
 - Select all: Selects all pages on the thumbnail panel.
 - Delete selected: Deletes the selected page on the thumbnail panel.
 - Delete all: Deletes all pages on the thumbnail panel.
- Save to file(s)
 - Single-page: Save scanned pages to multiple single-paged files.
 - Multi-page: Save scanned pages to a single multi-paged file.
- Preview: To switch back to capturing mode with live preview.

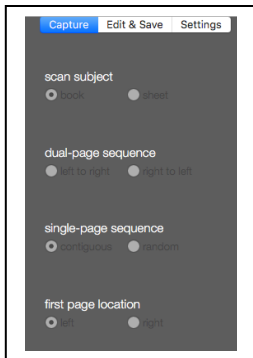
The Settings subpanel

- Page detection
 - Automatic: Detects pages automatically and produces a frame around each page.
 - Manual: Lets users define the page corners manually when capturing edge-printed book pages such as book covers.
- Image enhancement mode:
 - Automatic: Document content is decided by an algorithm and a suitable enhancement mode is applied automatically
 - Text on white background: Page background is cleaned and text contrast is increased
 - Photos, graphics and others: Subtle shades and background details are preserved
- Automatic image processing: Processes captured images automatically. If not selected, no processing is done to the raw image.
- Automatic finger removal: Automatically removes finger images within a page.
- Flatpage Pro: Uses an advanced version of the Digital Page Flattening algorithm whereby text paragraphs and image borders are straightened and centered.
- Hardcover book: Turn this on when scanning books with hard covers to increase page flattening and crop reliability.
- OCR languages: Select up to 2 different OCR languages for text decoding. If only one language is present in a page, select just one language to drastically increase file saving speed.

5. Workflow

This section describes the entire workflow in detail, with references to features of the user interface as detailed under Chapter 4.

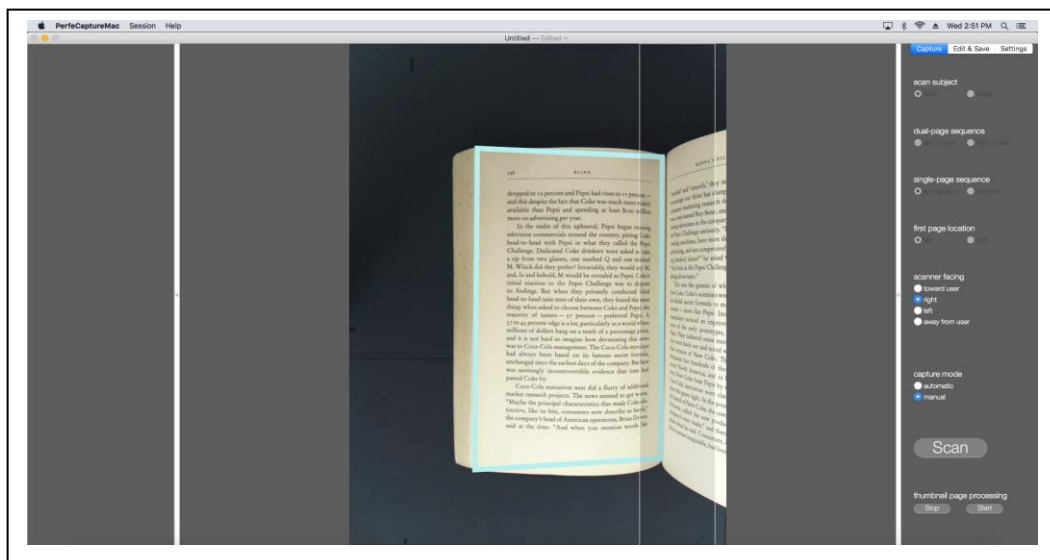
5.1 Changing session configuration



Once the main window opens, the session configuration can still be changed before any scan is made using the radio-button controls at the top of the 'Capture' page. After a capture is made, it is no longer possible to change the session configuration.

5.2 Setting the preview window orientation

The xcanex can be positioned in 4 directions to cater for different preferences and usage. For instance, it is recommended that the scanner face sideways toward the left or right when scanning in single page mode.



In this case, the preview window may be rotated by selecting the appropriate orientation under 'Preview Orientation' so that it intuitively displays motion in the same direction as user's movement.

5.3 Book and sheet positioning

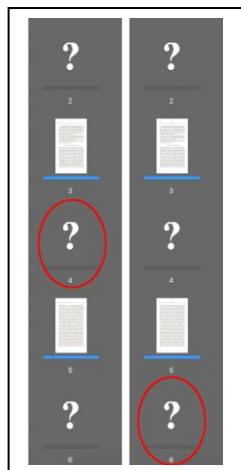
- In book dual-page mode, position the book such that its gutter lies in between the 2 white lines at the center of the window.
- In book single-page mode, position the book such that its gutter lies in between the 2 white lines at the edge of the window.
- For a single sheet, place it anywhere within the preview window.
- For dual-sheets, place each sheet within its left and right scan area.

5.4 Capturing

- There are 2 ways to initiate a capture:
 - By manually pressing the spacebar or clicking the 'Capture' button
 - By letting the scanner automatically trigger when a page is set
- It is recommended to turn on the automatic mode by selecting 'Automatic' under 'Capture mode' (pressing the 'A' key on the keyboard will toggle between auto and manual mode):
 - Once in automatic capture mode, the scanner will instantly capture once a valid page is detected and when there is no motion.
 - Always keep in motion while setting/flipping a page until it is set. Then keep still for a second and capture shall initiate, with a red page frame appearing at the edges of the page.
 - Once capture is done, the page frame will turn green after which the page can be immediately removed, replaced or flipped.
 - The captured image will immediately appear in the thumbnail panel and will be processed automatically.
- Capturing in single-page contiguous mode
 - When scanning a whole book or a section in sequence without skipping any page, this mode allows you to scan all the left pages first

followed by all the right pages and vice-versa. Therefore a book only needs to be physically rotated once throughout the whole session.

- Before starting a capture, identify the first page of the section.
- Note that no pages preceding the first page are to be scanned in the entire session.
- If the first page is on the left, select 'First page location' -> 'Left', otherwise select 'First page location' -> 'Right'.
- For the rest of the description, the '1st side pages' shall refer to the side of the pages to be scanned first (which could be left or right), and the '2nd side pages' refers to the pages opposite the 1st side pages.
- With every 1st side page captured, a 'blank frame' shall appear after the scanned page to represent the 2nd side page to be captured later.
- Continue to capture all the 1st side pages until every 1st side page is scanned.
 - After all the 1st side pages are scanned, it is recommended that all the scanned pages be checked to ensure no missing or duplicated pages. If errors are found, correct the errors first (see section 5.2 on deleting, inserting or replacing pages) before proceeding to scan 2nd side pages.
 - Rotate the book 180 degrees so that 2nd side pages can now enter the scan area.
- Identify the last page of the 2nd side pages:



- If it is after the last page of the 1st side pages, click the blank frame following the last scanned page

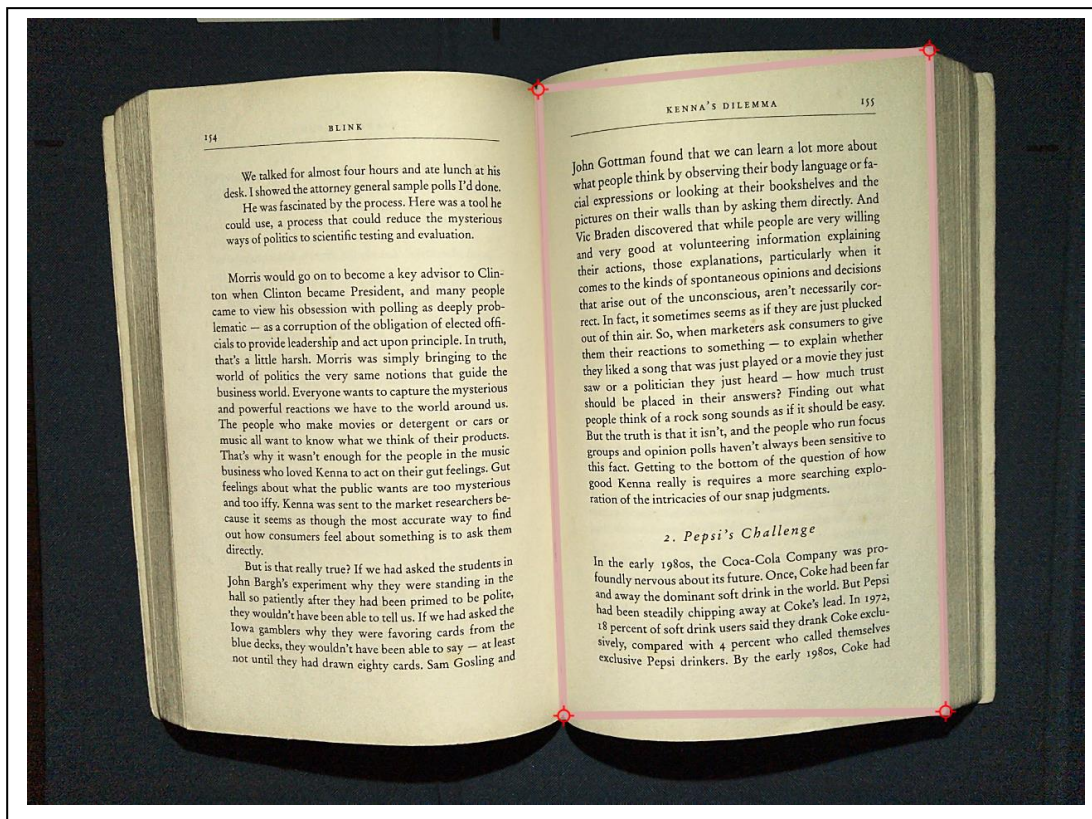
- If it is before the last page of the 1st side pages, click the blank frame preceding the last scanned page
- Continue to scan all the 2nd side pages until all the blank frames are filled
- Capturing book pages with edge printing.
 - Manual capturing is useful in cases whereby a page cannot be reliably detected, such as book pages with edge printing (i.e. pages with ink printing all the way to its top or bottom edges).
 - In this case, use manual capturing in conjunction with manual page detection:
 - Under the “Settings” tab, select “Manual page detection”.
 - Place the book within the preview window and click at the 4 corners of the page. For dual-page mode, click at the 2 left corners of the left page followed by the 2 gutter ends at the center (top and bottom), and then the 2 right corners of the right page.

5.5 Viewing and editing scans

This section describes the viewing and editing features that can be applied to the scanned images.

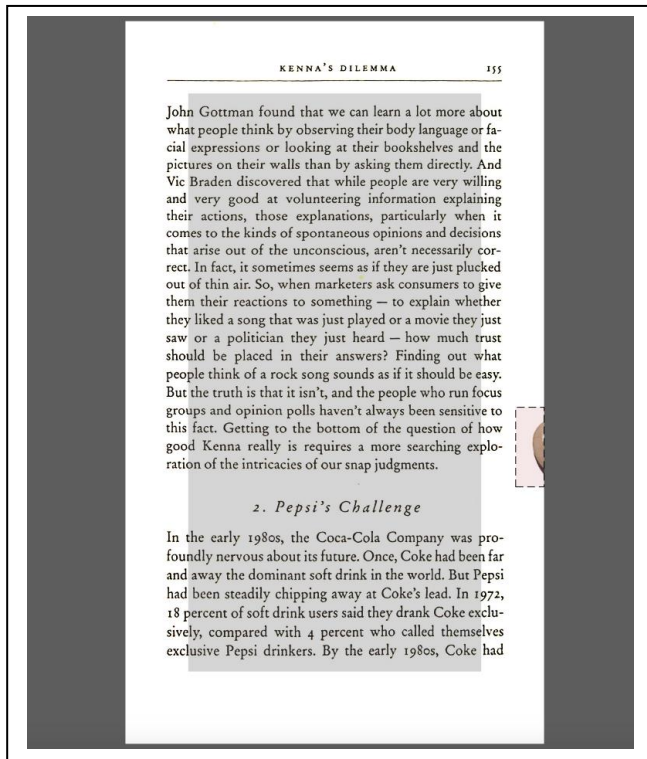
- To enter the edit mode from capture mode, simply click the page to be edited on the thumbnail panel and the full-size image will be displayed at the main window.
- To magnify the page, point anywhere within the main window and move the mouse’s scroll wheel. Alternatively, hold the left button of the touchpad and pinch in or out on the pad.
- To pan the image after magnifying, point anywhere within the main window and hold the left mouse button. Alternatively, hold the left button of the touchpad while moving a finger on the pad.
- To rotate a page, click either ‘+90 deg’ (clockwise) or ‘-90 deg’ (counter-clockwise).
- To crop a page, firstly un-zoom the image fully until it fits the window. Then hold the left mouse button to draw a rectangular frame to define the crop borders. Click the ‘Crop page’ button to crop.

- Occasionally, a page may not be properly processed and appear distorted. In such a case, the page can be re-processed by manually defining the page corners.
- To do this, firstly click 'Define page' and the original unprocessed image will be displayed.
- Point the mouse pointer any corner of the page that you wish to re-process and a marker will appear.
- Repeat this for the remaining 3 corners. Any marker can be further fine adjusted by click and hold, and then drag.



- After all 4 page corners are marked, click 'Process' under 'Re-process page' to re-process the page.
- In case there are finger images which remain on a page, they can be manually removed by firstly clicking 'Select' under 'Finger images'.
- A shaded rectangle will appear at the middle of the page when in finger definition mode. Select a finger image by dragging a vertical or horizontal

line that travels the entire finger area, and an enclosure will be automatically created upon releasing the mouse button. Multiple fingers can be defined using this same procedure.



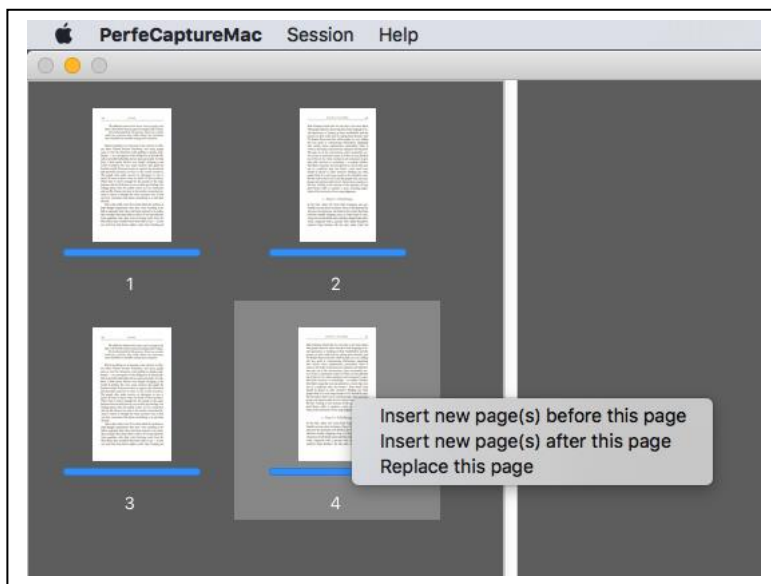
- Click 'Remove' under 'Finger images' to clear the areas within all enclosures simultaneously.
- Switching enhancement mode
 - There are 2 image enhancement modes that can be applied to each page.
 - Document enhancement mode: Removes background stain, shadows and page bleed-through while enhancing text.
 - Pro-photo mode: Removes shadows caused by book curvature while retaining all page contents and preserving subtle shades in graphics.
 - To instantly switch between these 2 modes for each page, click the 'Toggle enhancement mode' button.

5.6 Page managing

The thumbnail panel offers several useful features for users to effectively and efficiently manage multiple pages.

To show more pages simultaneously, the thumbnail panel can be enlarged by dragging the separator in between the panel and the main window.

- To select multiple pages for a certain operation, press and hold the 'Command' key while selecting. Alternatively, use the mouse or touchpad to enclose a group of thumbnails. To select all pages, click the 'Select all pages' button.
- To delete a page, simply select the page(s) and press the keyboard 'Delete' key. To delete all pages, click the 'Delete all' button.
- To insert a page, right-click on the page nearest to the location where a new page is to be inserted and choose either to place the subsequent scan before or after the selected page. An empty frame shall be inserted whereby a subsequent scan will then occupy.

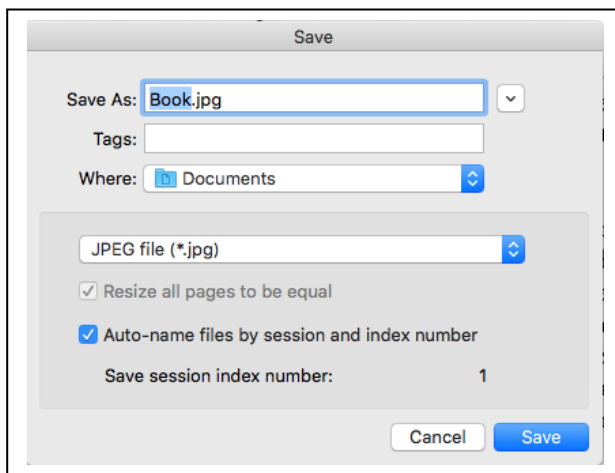


- In single-page contiguous mode, page deletion and insertion must be in pairs so as not to disrupt the left and right page order.

- To replace a page, choose 'Replace this page' after right-clicking on the page and an empty frame shall replace the page. A subsequent scan shall then occupy this empty frame.
 - Note for dual-page capture mode: If the original page is a left page, the empty frame will be replaced by the left page of the subsequent dual-page scan.
- To move a page to another location, simply key in the new destination frame number into its page index box and press enter.

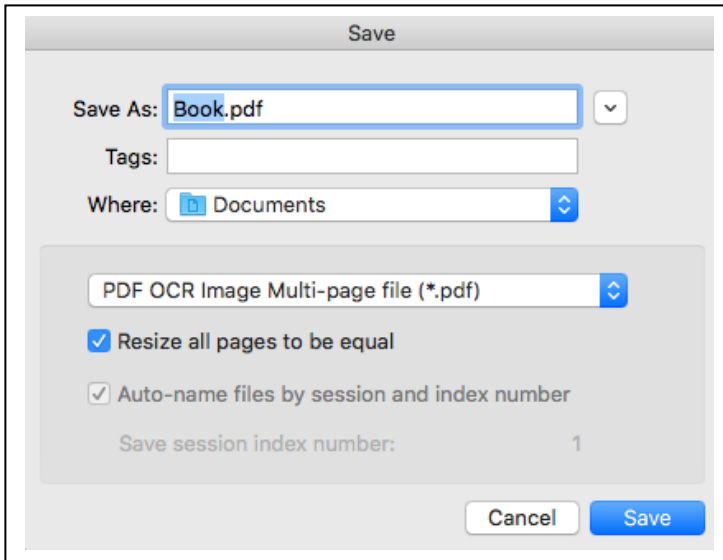
5.7 Saving scans to files

- Multiple pages can either be saved as multiple single-page files, or a single multi-page file.
- These file formats are supported: PDF, searchable PDF (OCR), EPUB ,MS-Word, MS-PowerPoint, MS-Excel, RTF, JPG, BMP, TIFF and PNG.
- However, only these file formats support multi-pages in one file:
- PDF, searchable PDF (OCR), EPUB ,MS-Word, MS-PowerPoint, MS-Excel, RTF.
- To save pages to multiple single-page files, select 'Saving to file -> Single-page file', and to save pages to a single multi-page file, select 'Saving to file -> Multi-page file'.



- When saving multiple single-page files, automatic naming of files can be done by checking 'Auto-name files by session and index number'. In this case, a session number and an index number are appended to the base

filename given by the user in the 'Save as' edit box. For example, an auto-generated filename could be 'myScans-22-3.jpg', whereby 'myScans' is the base name given by the user, '22' is the current session number and it is the 3rd scan of the current session. The session number increments automatically every time a scan session is saved and it cannot be modified.

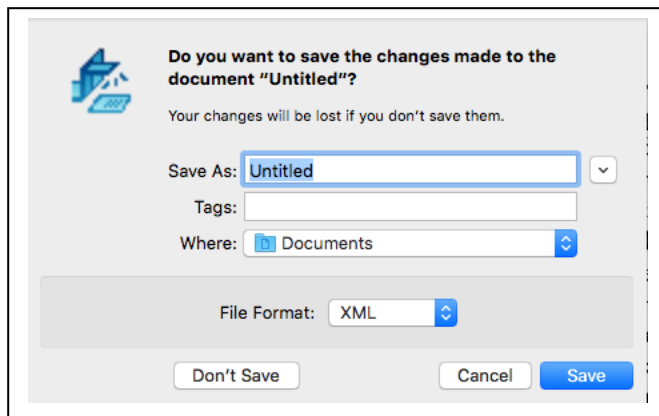


- When saving a single multi-page file, all pages can be re-sized to be exactly the same by checking 'Resize all pages to be equal'.

5.8 Saving and closing a scan session

A scan session can be saved for future continuation during closing of PerfeCaptureMac.

- If you wish to exit before image processing is complete, click the 'Stop' button under 'Thumbnail page processing' and processing will halt after the current page is processed.
- After processing is halted, quit PerfeCaptureMac by clicking on 'PerfeCaptureMac-> Quit PerfeCaptureMac' at the top drop down menu.



- Before closing, a dialog box will appear asking if you would like to save the changes made to the document (i.e. session). Give a name to the session to be saved under 'Save As' and click 'Save'.