

# PhotoDoc: Batch Processing and Image Enhancement for the Genealogy World

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When trying to catalogue, read and understand digitally scanned microfilm, several problems can occur. When originally scanned, there can be problems with the scanning apparatus, its settings, or the quality of the microfilm itself. After scanning several hundred of these, one may realize that there are problems due to these factors. Also, many times, a person accessing digital microfilm is not the person who scanned the microfilm, and an important area was not well scanned. When either of these situations occur, the user may want to enhance these images in order to read specific information without having to find the specific microfilm and rescan it. PhotoDoc has been designed to fulfill this need.

When images have problems due to scanning errors, often many images have problems of similar scope. There can be hundreds of images all showing the same problems. We have researched and produced a way in which a user can figure out a sequence of steps that enhance one image that has problems representative of many other images, train the computer to make those same steps again, and then have the computer run on any number of other images. The tools we have used to create this ability include a history of operations performed, a wizard that allows all functions to be accessed from one area and can be programmed to perform any combination of those functions and increased interoperability among the functions.

We are also attempting to trace the letters of any given word and predict where the lines would have gone if the information had not been lost. If we succeed in this endeavor, we could train a computer to recreate letters that have already been partially lost, and thus aid computer recognition code in automatically extracting the information. The tools that we are using to improve this area are livewire and linear integral searches to find the best "fit" for a given segment of line. If we are able to succeed in this area, we hope to be able to not only recreate letters, but also decrease the noise in these documents and perhaps fully extract all important lines. Combining this technology with the letter and pattern recognition software that others are pursuing, we hope that we may soon be able to automatically extract important information from these documents and allow users to search databases instead of searching through one image at a time for a name.