**Annotated Bibliography**

1. B. Cornelis, T. Ružić, E. Gezels, A. Dooms, A. Pižurica, L. Platiša, J. Cornelis, M. Martens, M. De Mey, and I. Daubechies. Crack detection and inpainting for virtual restoration of paintings: The case of the Ghent Altarpiece. *Signal Processing*, 93(3):605-619, March 2013. <http://www.sciencedirect.com/science/article/pii/S0165168412002526>. *Provides background information on the causes of cracks in paintings, and why digital restoration is useful. Great source for information on the challenges involved in crack detection and inpainting. Describes three methods of crack detection in thorough detail and provides performance comparisons, which may prove helpful. Also goes into depth on inpainting, should I include this topic as well.*
2. G. S. Spagnolo and F. Somma. Virtual restoration of cracks in digitalized image of paintings. <http://iopscience.iop.org/1742-6596/249/1/012059/pdf/1742-6596_249_1_012059.pdf>. *Journal of Physics: Conference Series (249)*, 2010. *This source provides a lot of useful background information not only on morphological operators, but also on why crack detection and inpainting are useful tools, and how cracks occur in the first place. Will probably be another core source, and may end up replacing pieces of [4] and [7] as a source.*
3. J. Canny. A computational approach to edge detection. <http://ieeexplore.ieee.org.ezproxy.morris.umn.edu/stamp/stamp.jsp?tp=&arnumber=4767851>. *Pattern Analysis and Machine Intelligence, IEEE Transactions on*, 8(6):679-698, November 1986. *Old source, and probably more technical than I am interested in going, so likely not a core source, but the algorithm described here is significantly referenced in[6], and so I am listing this currently as background information, with potential to become more significant, depending on the direction I choose to go.*
4. Morphological Image Processing. <https://www.cs.auckland.ac.nz/courses/compsci773s1c/lectures/ImageProcessing-html/topic4.htm>. *This resource is nonacademic, and not peer-reviewed, and therefore may not be referenced in the final draft. However, it does provide a lot of useful background information on morphological operations that I have seen confirmed in multiple other resources.*
5. N. Efford. *Digital Image Processing: A Practical Introduction Using JavaTM*. Pearson Education, 2000. *This source is cited as providing the main material for [4]. Because of the usefulness of [4], and because this is probably a somewhat more academic source, I am in the process of tracking this down. However, it has not been obtained as of yet, and therefore not yet read. I am hoping, however, that this will become my main background source.*
6. N. Karianakis and P. Maragos. An integrated system for digital restoration of prehistoric Theran wall paintings. In *Digital Signal Processing (DSP), 2013 18th International Conference on*, pages 1-6, July 2013. <http://ieeexplore.ieee.org.ezproxy.morris.umn.edu/stamp/stamp.jsp?tp=&arnumber=6622838>. *Initial source, and probably will be one of the core sources used. Covers the basic principles of crack detection and inpainting, as well as provides some technical information. Information is presented via case study. Unfortunately, descriptions are at times vague, and figures are largely unhelpful.*
7. R. Fisher, S. Perkins, A. Walker, and E. Wolfart. Morphology. <http://homepages.inf.ed.ac.uk/rbf/HIPR2/morops.htm>, 2003. *This resource is nonacademic, and not peer-reviewed, and therefore may not be referenced in the final draft. However, it does provide a lot of useful background information on morphological operations that I have seen confirmed in multiple other resources. Information here is similar to that found in [4] (which actually cites this), but explains some concepts more clearly.*
8. R. M. Haralick, S. R. Sternberg, and X. Zhuang. Image analysis using mathematical morphology. *Pattern Analysis and Machine Intelligence, IEEE Transactions on*, 9(4):532-550, July 1987. <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=4767941>. *Old source, but provides a lot of excellent information on morphological operations, which is currently my main focus. Definitely has potential to become a core source.*
9. S. D. Desai, K. V. Horadi, P. Navaneet, B. Niriksha, and V. Siddeshvar. Detection and removal of cracks from digitalized paintings and images by user intervention. In *Advanced Computing, Networking and Security (ADCONS), 2013 2nd International Conference on*, pages 51-55, December 2013. <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6714137>. *This source provides more background information on the categorization of damages in art and the advantages provided by digital art restoration. It also contains a fairly detailed summary of existing methodologies for crack detection and inpainting, as well as presents a proposed methodology accompanied by thorough data on the performance of this methodology. Not certain if this source will be used in the final draft, but it may serve as a starting point in obtaining other sources.*