

In this thesis we present the application of digital image processing algorithms for the process of fresco restoration such as image registration, image fusion, and image segmentation. We have worked with images of various modalities (visual and ultraviolet spectra) and at different times. Moreover, during the image analysis we also have taken the local chemical analysis into account. The robustness of proposed algorithms is required to be high with respect to the bad state of the fresco. The achieved results provide a better insight into the evolution of the fresco aging to the art conservators and show the way how a proper conservation method can be chosen. All developed methods are illustrated by generated output images.