Abstract

Images taken with macro lenses, microscope lenses or lenses with large focal length suffer from shallow depth of field. It is possible to take several images of the scene and combine them artificially into one sharp image. In this work we review known approaches to extended depth of field (EDF) and in detail discuss several chosen algorithms, both working in spatial domain and through wavelet transform. We implemented a framework for EDF algorithms in Java as an ImageJ plugin with all the chosen algorithms. Afterwards we compared their performance on both artificial and real datasets. Among the tests were also robustness to Gaussian and impulse noise. We also discuss the most common artifacts and disadvantages of the algorithms.