

Color information of a scene is only recorded partially by a digital camera. Specifically, only one of the red, green, and blue color components is sampled at each pixel. The missing color values must be estimated — a process called demosaicing. Demosaicing can be solved as an individual step in the image processing pipeline. In this case, any errors and artefacts produced by this step are carried over into further steps in the image processing pipeline and are possibly magnified. Alternatively, we can try to resolve several degradations at once in a joint solution, which eliminates this effect. We present one such solution, that in addition to demosaicing, also jointly solves denoising, deconvolution, and super-resolution in the form of a convex optimization problem. We provide an overview of demosaicing methods and evaluate the results from our solution against selected existing methods.