Digital photography became widespread with the global use of smartphones. However, most of the captured images do not fully use the camera capabilities by storing the captured photos in a format with limited dynamic range. The subject of dynamic range expansion and reconstruction has been researched since early 2000s and recently gave rise to several new reconstruction methods using convolutional neural networks (CNNs), whose performance has not yet been comprehensively compared.

By implementing and using our dynamic range reconstruction evaluation framework we compare the reconstruction quality of individual CNN-based approaches. We also implement a mobile HDR camera application and evaluate the feasibility of running the best-performing reconstruction method directly on a mobile device.