The primary purpose of this thesis is to determine criteria for a high-
dynamic range (HDR) image viewer accented by computer graphics artists and
other users who work with HDR images produced by physically-based renderers
on a daily basis. Also an overview of already existing solutions is present. Based
on both of them, a new HDR viewer is designed and implemented giving an
emphasis on its memory and performance efficiency.

For these purposes two alternative image data layouts, Array-of-Structures (AoS)
and Structure-of-Arrays (SoA), are discussed and their impact is measured on the
speed of an algorithm for changing image saturation which has been selected as
a representative part of whole tone mapping process of the viewer. It has turned
out that the latter type of layout allows the algorithm to run about 3 times faster
or more under the conditions of a defined testing environment.

The thesis has two main contributions. First it gives the above users a tool which
could help them when working with HDR images. Second it indicates that there
may be a potential of significant speed-up of implementations of tone mapping
algorithms.