```r
# Apply edge detection

laplacianFilter <- matrix(1, nrow = 3, ncol = 3)
laplacianFilter[2, 2] <- -8
filteredImage <- filter2(image, laplacianFilter)

# Convert image to matrix

channelCount <- 4
imageMatrix <- matrix(image, ncol = channelCount, byrow = TRUE)
str(imageMatrix)

# num [1:65536, 1:4] 0.204 0.204 0.204 0.2 0.184 ...

# Run PCA

pc <- princomp(imageMatrix)

# List of 7
#  $ sdev    : Named num [1:4] 0.6228 0.0859 0.0449 0.0284
#   ..- attr(*, "names")= chr [1:4] "Comp.1" "Comp.2" "Comp.3" "Comp.4"
#  $ loadings: loadings [1:4, 1:4] -0.492 -0.502 -0.506 -0.499 0.702 ...
#   ..- attr(*, "dimnames")=List of 2
#   .. ..$ : NULL
#   .. ..$ : chr [1:4] "Comp.1" "Comp.2" "Comp.3" "Comp.4"
#  $ center  : num [1:4] 0.646 0.645 0.642 0.643
#  $ scale   : num [1:4] 1 1 1 1
#  $ n.obs   : int 65536
#  $ scores  : num [1:65536, 1:4] 0.878 0.876 0.884 0.891 0.909 ...
#   ..- attr(*, "dimnames")=List of 2
#   .. ..$ : NULL
#   .. ..$ : chr [1:4] "Comp.1" "Comp.2" "Comp.3" "Comp.4"
#  $ call    : language princomp(x = imageMatrix)
#  - attr(*, "class")= chr "princomp"

```