CODECHECK certificate 2020-002

http://doi.org/10.5281/zenodo.3750741

Item	Value
Title	The principal components of natural images
Authors	Peter J. B. Hancock, Roland J. Baddeley, Leslie S. Smith
Reference	Network (1992) 3:61-70 http://pdfs.semanticscholar.org/7dcf/a42cfe3b59becb441844b72558b361693608.pdf
Codechecker	Stephen J. Eglen Daniel Nüst
Date of check	2020-04-13 10:00:00
Summary	Matlab code written by Iain Davies to reproduce original paper; natural images provided by Peter Hancock.
Repository	https://github.com/codecheckers/Reproduction-Hancock

Table 1: CODECHECK summary

File	Comment	Size
Figure2.png	manuscript Figure 2	41513
Figure3.png	manuscript Figure 3	41489
Figure4.png	manuscript Figure 4	46935
Figure5.png	manuscript Figure 5	33332
Figure6.png	manuscript Figure 6	63185
Figure7.png	manuscript Figure 7	71145
Figure8.png	manuscript Figure 8	293243

Table 2: Summary of output files generated

Summary

This code was straightforward to codecheck. The code came from Iain Davies, a Cambridge mathematics student, who worked on reimplementing the Hancock et al paper. I asked him to ensure that the code for each figure could be re-run to generate a pdf.

CODECHECKER notes

The github repo https://github.com/IainDaviesMaths/Reproduction-Hancock contained all the necessary code. The code was written in Matlab.

Running the software to regenerate outputs.

The root Makefile contained targets to regenerate all of the figures using:

```
make -j7 all
```

This took 7m 10s to complete on a large workstation.

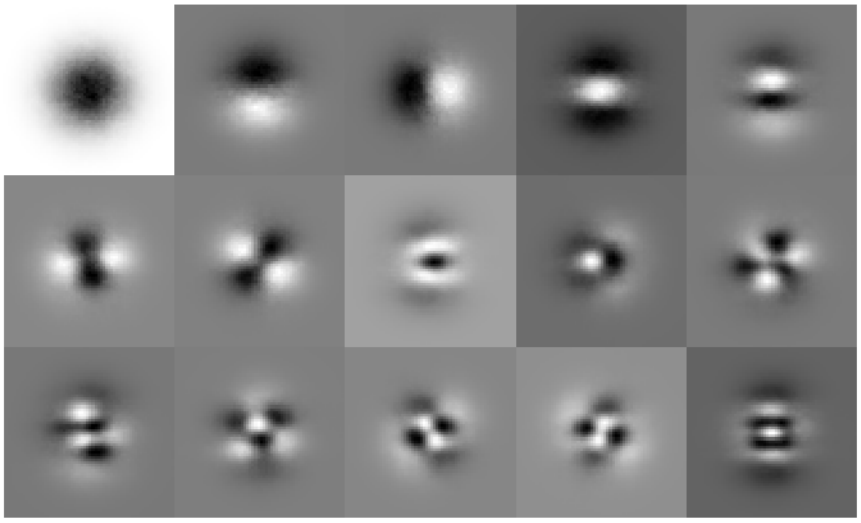

Figure C1: manuscript Figure 2

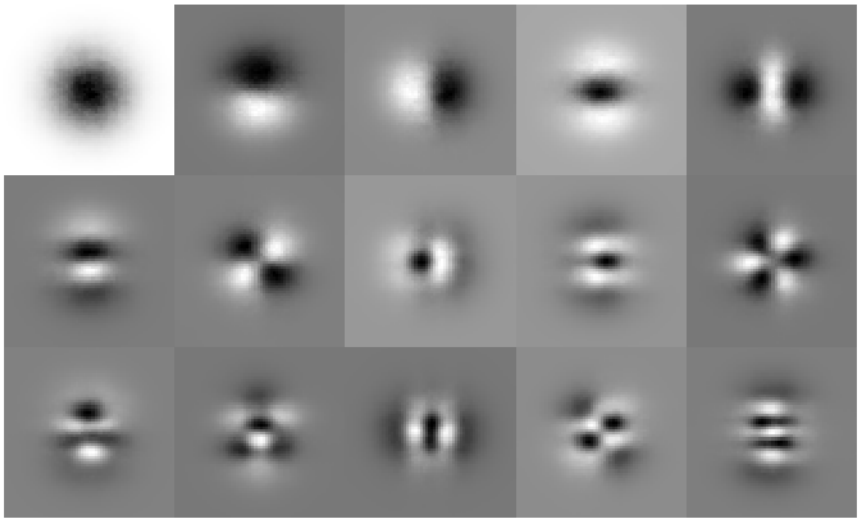

Figure C2: manuscript Figure 3

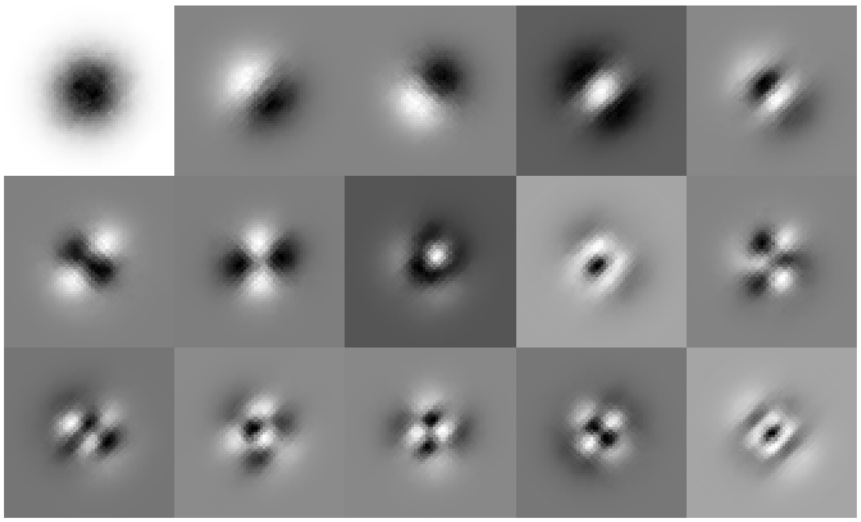

Figure C3: manuscript Figure 4

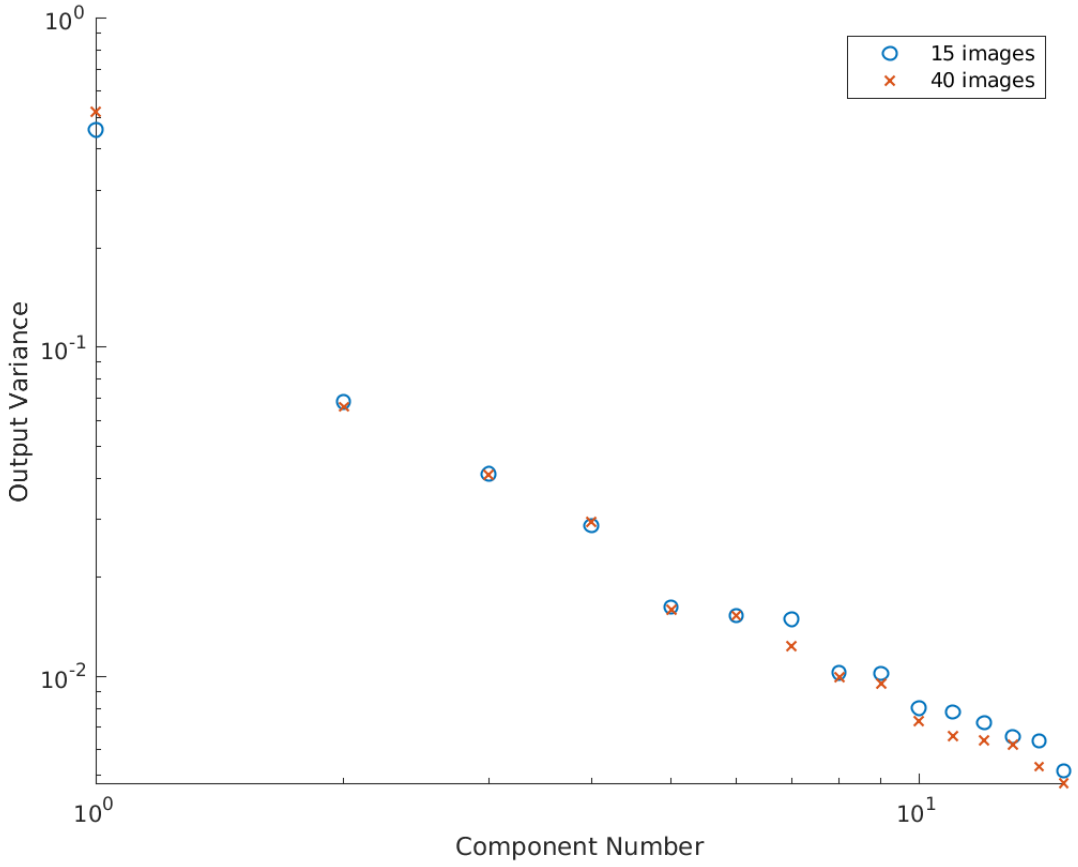

Figure C4: manuscript Figure 5

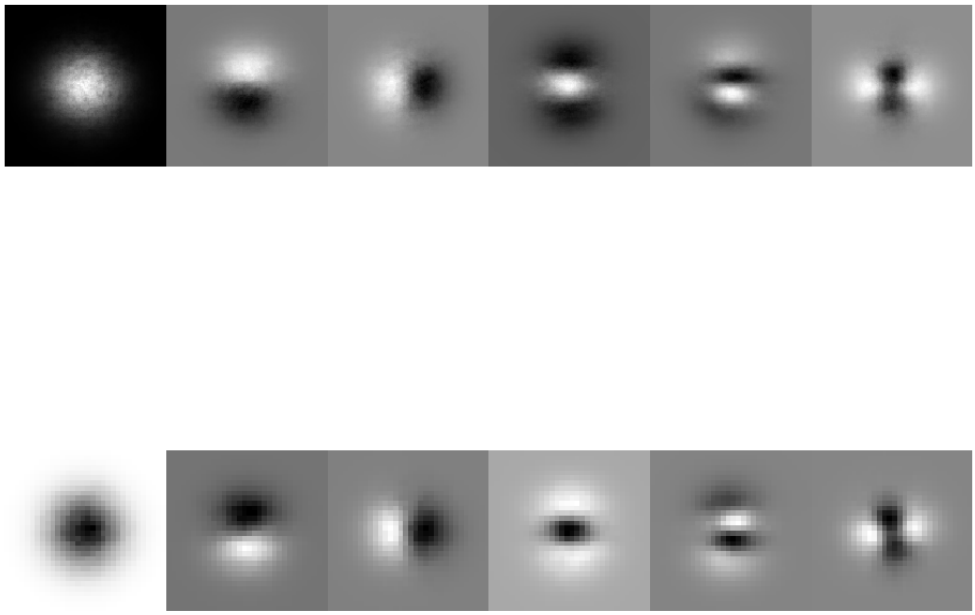

Figure C5: manuscript Figure 6

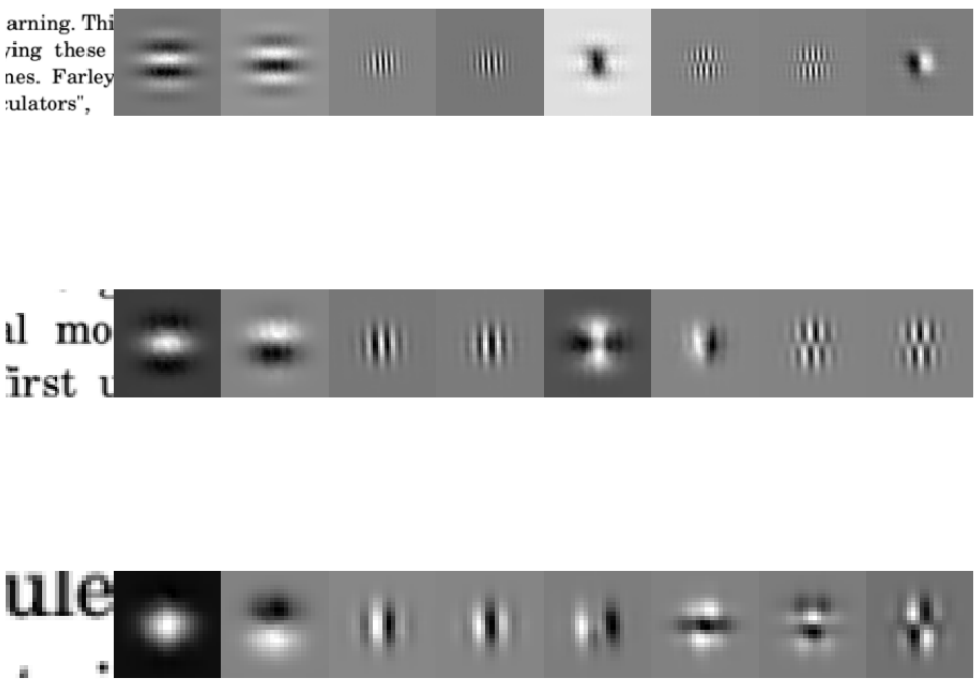

Figure C6: manuscript Figure 7

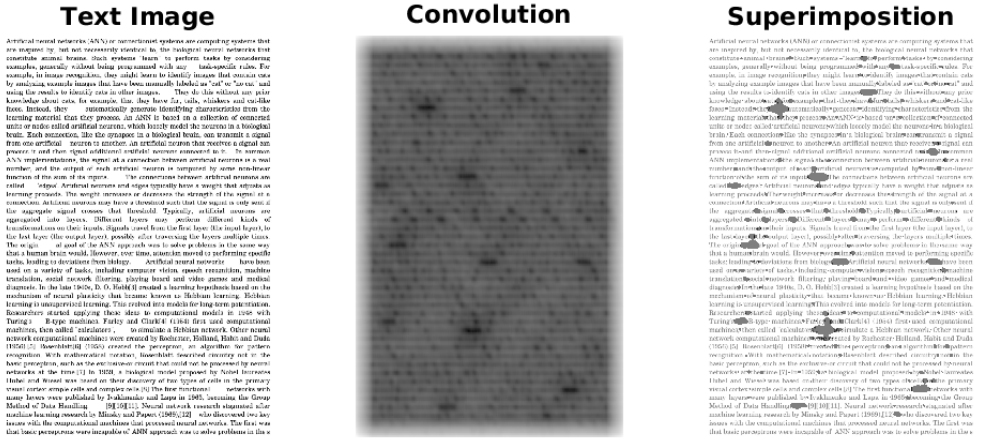

Figure C7: manuscript Figure 8

About this document

This document was created using Rmarkdown. `make codecheck.pdf` will regenerate the file.

```
sessionInfo()
```

```
## R version 3.6.3 (2020-02-29)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: Manjaro Linux
##
## Matrix products: default
## BLAS:   /usr/lib/libopenblasp-r0.3.9.so
## LAPACK: /usr/lib/liblapack.so.3.9.0
##
## locale:
##  [1] LC_CTYPE=en_GB.UTF-8       LC_NUMERIC=C
##  [3] LC_TIME=en_GB.UTF-8        LC_COLLATE=en_GB.UTF-8
##  [5] LC_MONETARY=en_GB.UTF-8    LC_MESSAGES=en_GB.UTF-8
##  [7] LC_PAPER=en_GB.UTF-8       LC_NAME=C
##  [9] LC_ADDRESS=C               LC_TELEPHONE=C
## [11] LC_MEASUREMENT=en_GB.UTF-8 LC_IDENTIFICATION=C
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets
## [6] methods   base
##
## other attached packages:
## [1] rprojroot_1.3-2 readr_1.3.1     tibble_2.1.3
## [4] yaml_2.2.0      xtable_1.8-3    knitr_1.26
##
## loaded via a namespace (and not attached):
##  [1] Rcpp_1.0.3      digest_0.6.23   crayon_1.3.4
##  [4] R6_2.4.1        backports_1.1.4 magrittr_1.5
##  [7] evaluate_0.14   highr_0.8       pillar_1.4.1
## [10] rlang_0.4.2     stringi_1.4.3   rmarkdown_1.18
## [13] tools_3.6.3     stringr_1.4.0   hms_0.4.2
## [16] xfun_0.11       compiler_3.6.3  pkgconfig_2.0.2
## [19] htmltools_0.4.0
```