

CODECHECK certificate 2024-003

<https://doi.org/10.5281/zenodo.FIXME>





Item	Value
Title	The principal components of natural images
Authors	Filip  , Anahita
Reference	https://arxiv.org/pdf/2310.19997
Codechecker	Stephen J. Eglén  , Delft 2024-05 participants
Date of check	2024-05-30 11:30:00
Summary	Matlab code provided by Filip. Case study 2 only. Full reproduction possible, takes about 2 hours to run
Repository	https://github.com/codecheckers/Reproduction-Hancock

Table 1: CODECHECK summary

Output	Comment	Size (b)
fig1.png	manuscript Figure 11	42357
fig2.png	(not included in manuscript)	38057
fig3.png	manuscript Figure 12 (orange curve only)	25218
fig4.png	manuscript Figure 13	29283
fig5.png	manuscript Figure 14	37977
fig6.png	manuscript Figure 15	31918
fig7.png	manuscript Figure 16	29730

Table 2: Summary of output files generated

Summary

This project was easy to reproduce. The key requirements were clearly stated, with the only additional requirement being the Control Systems toolbox.

The computation time was approximately 2 hours.

CODECHECKER notes

The GitHub repo ... This check is based on the commit `3a207988dcbe4605866d83067f33374857bd08e6`. Code was written in ... I went through the following steps ... One hard problem was ... I added the following files ... using tools/methods ...

This took ... minutes to complete on {a large workstation, my laptop}.

The steps were to simply start matlab in the root folder and type ‘main’ at the prompt.

Figures 1 through 7 then appeared on the screen and were saved as PNGs.

Repository states that only case study 2 (2nd half of paper) was to be tested.

Recommendations

I suggest to the authors to consider the following suggestions for their next publication or workflow:

- Saving figures automatically to a folder.
- State how long the computation takes on a modern day laptop.

Manifest files

fig1.png

Comment: manuscript Figure 11

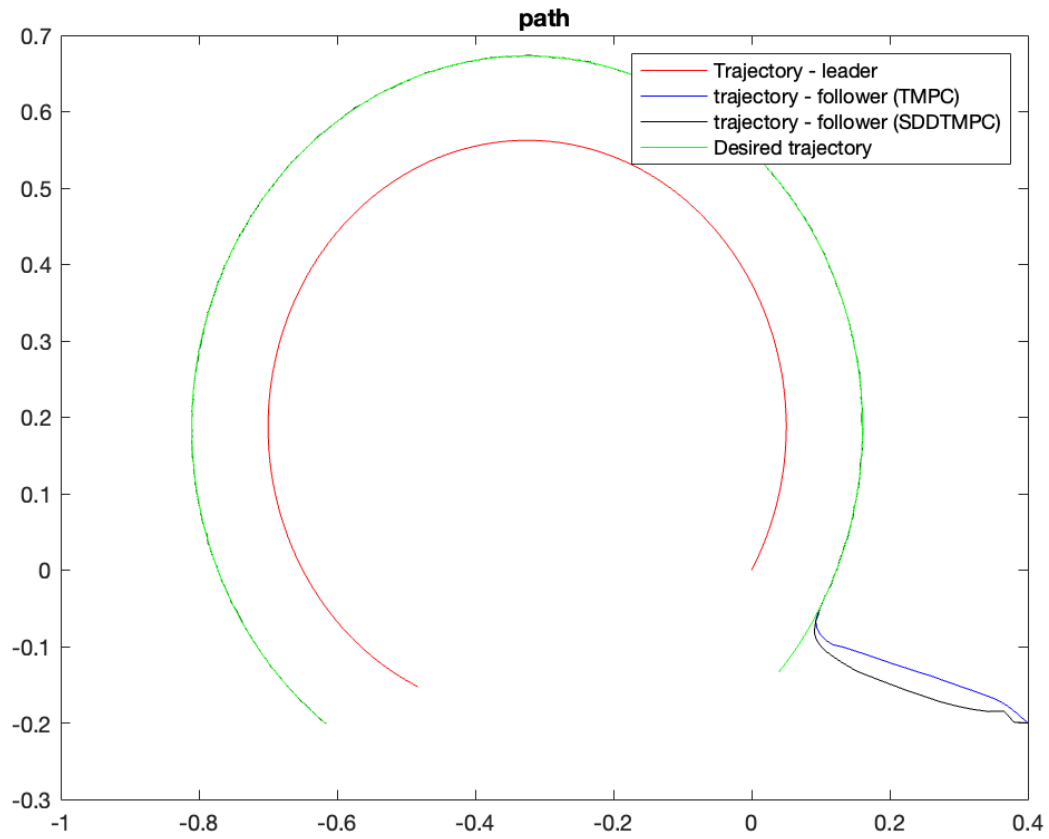


fig2.png

Comment: (not included in manuscript)

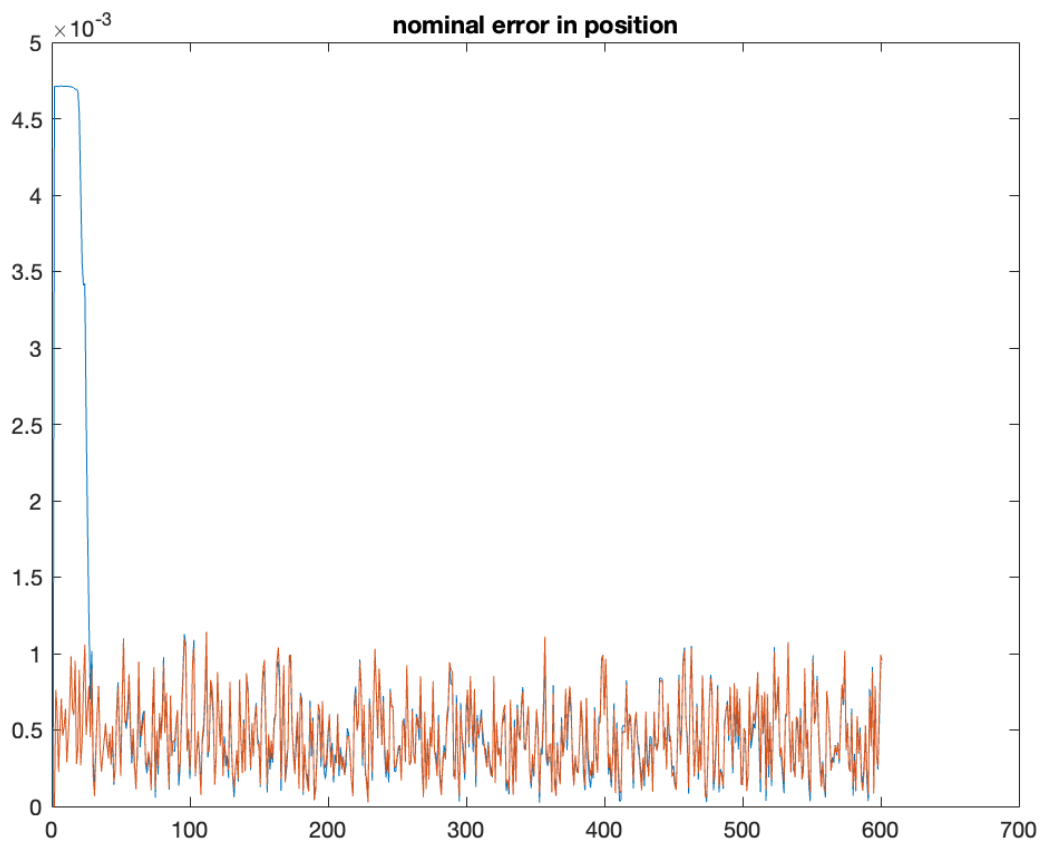


fig3.png

Comment: manuscript Figure 12 (orange curve only)

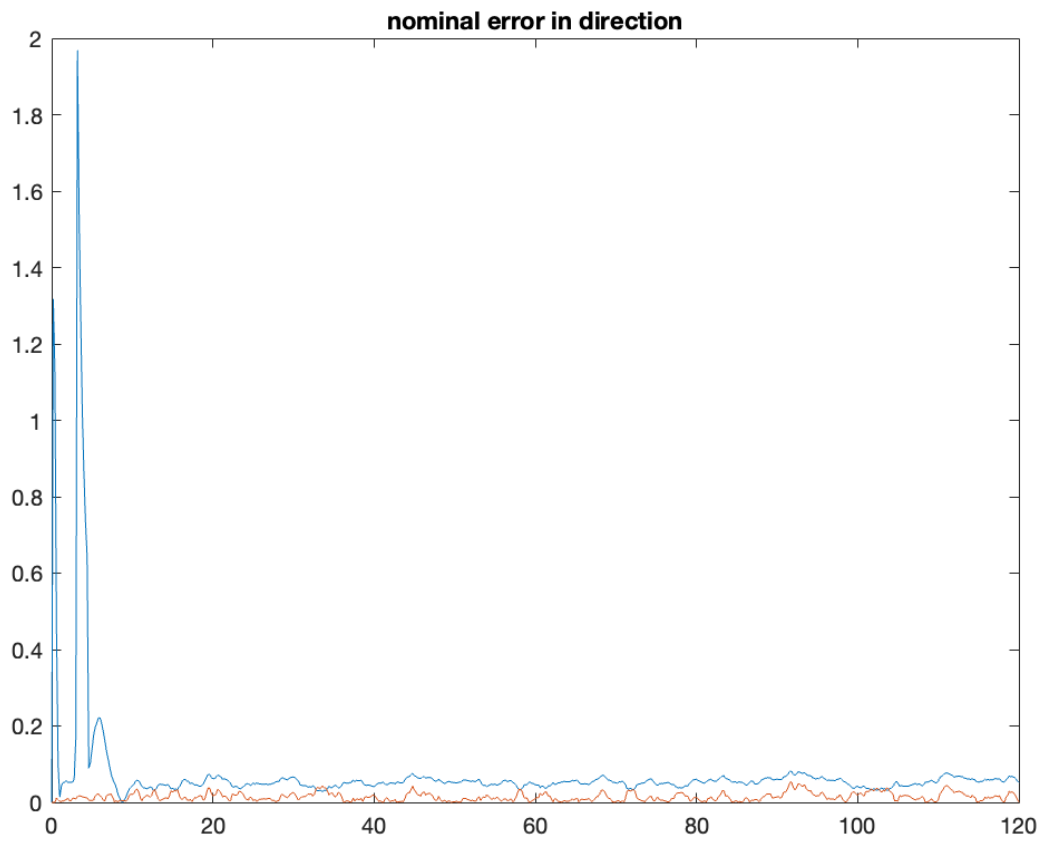


fig4.png

Comment: manuscript Figure 13

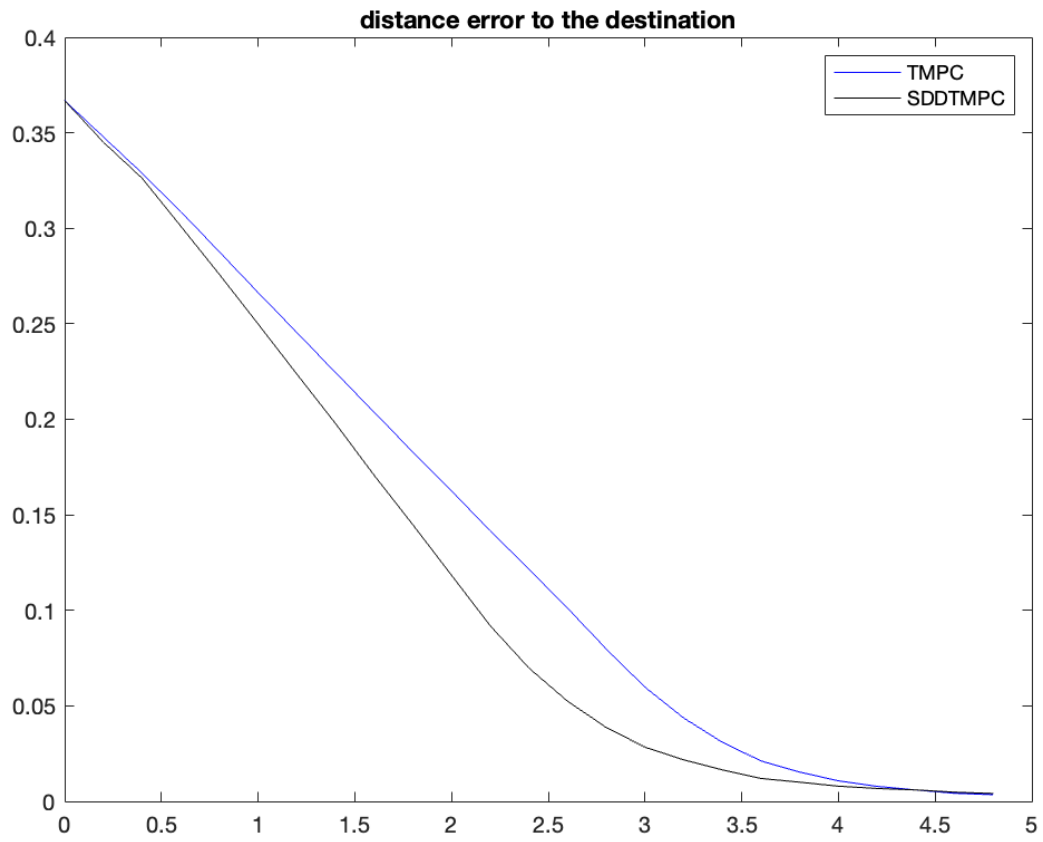


fig5.png

Comment: manuscript Figure 14

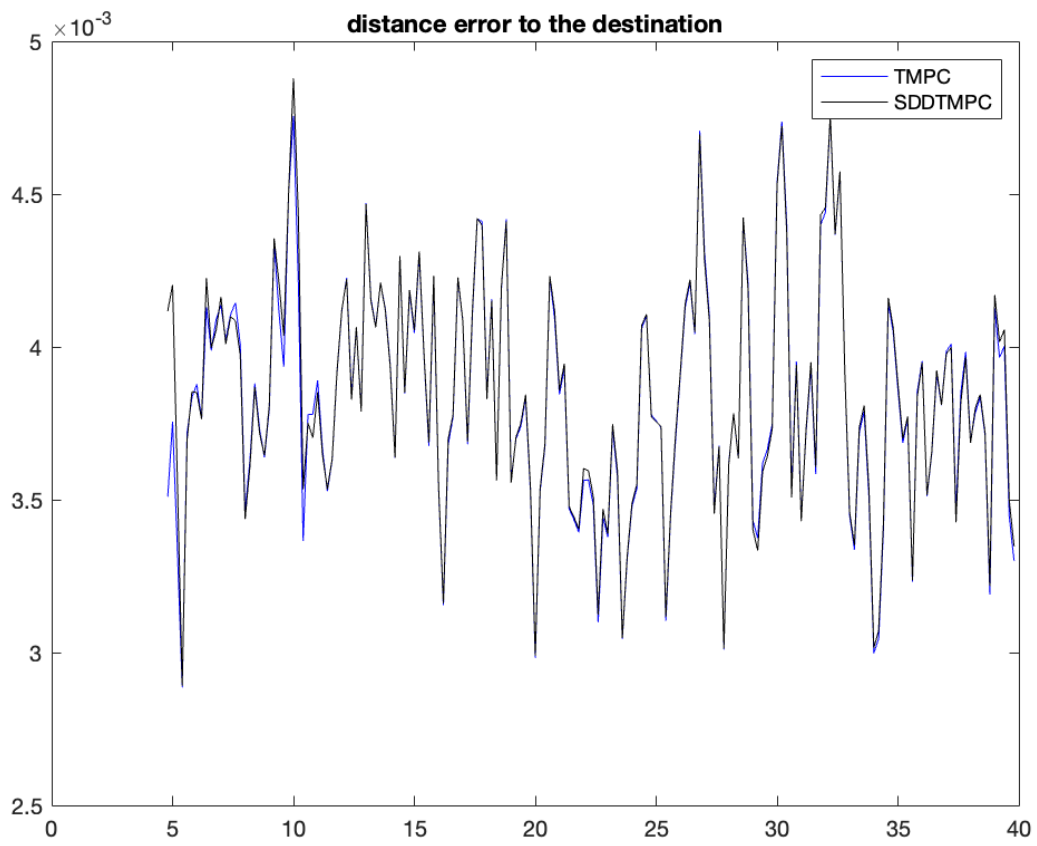


fig6.png

Comment: manuscript Figure 15

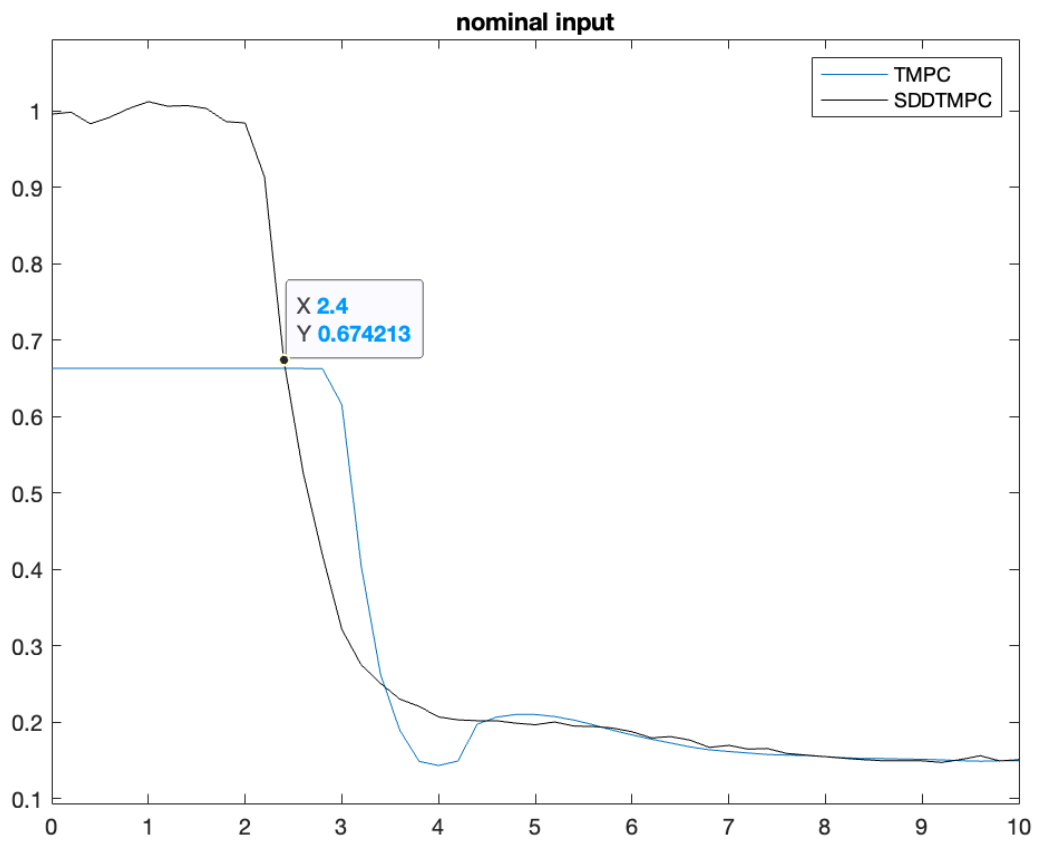
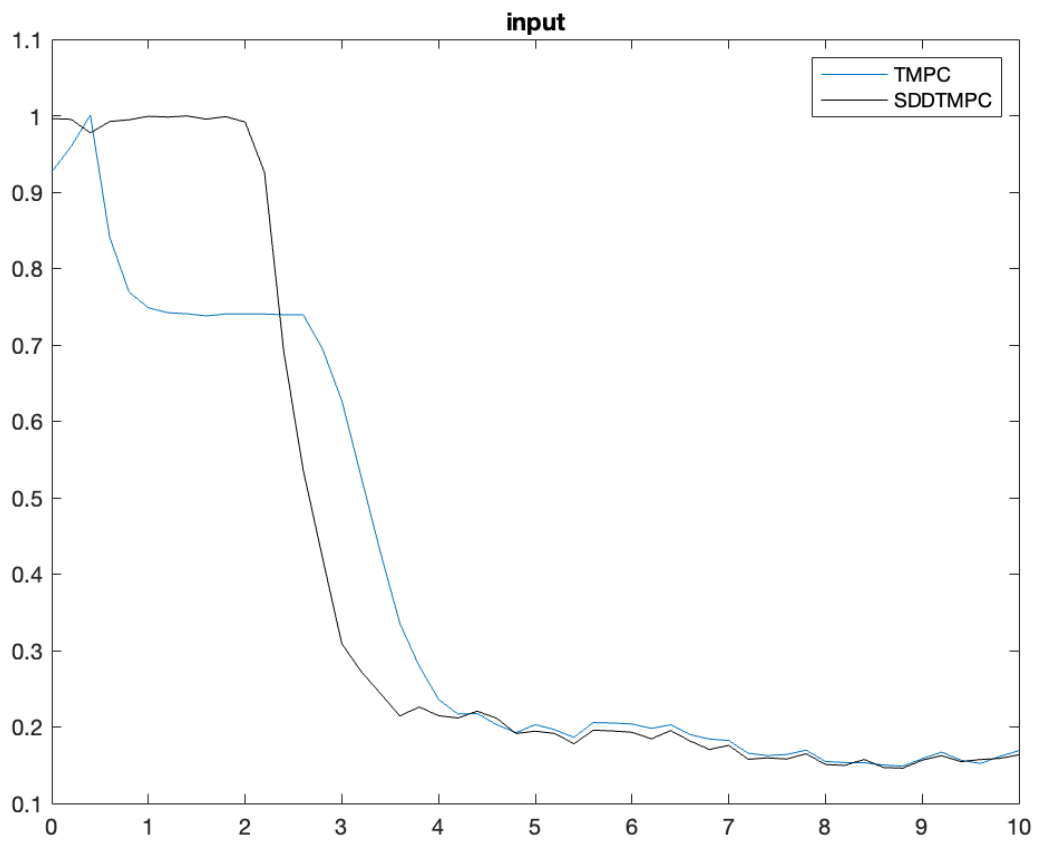


fig7.png

Comment: manuscript Figure 16



Acknowledgements

I would like to thank Dr Bhatt and his team for promptly answering any queries I had with this reproduction. CODECHECK is financially supported by the Mozilla foundation.

Citing this document

Stephen J. Eglen, Delft 2024-05 participants (2024). CODECHECK Certificate 2024-003. Zenodo. <https://doi.org/10.5281/zenodo.FIXME>

About CODECHECK

This certificate confirms that the codechecker could independently reproduce the results of a computational analysis given the data and code from a third party. A CODECHECK does not check whether the original computation analysis is correct. However, as all materials required for the reproduction are freely available by following the links in this document, the reader can then study for themselves the code and data.

About this document

This document was created using R Markdown using the `codecheck` R package. `make codecheck.pdf` will regenerate the report file.

```
sessionInfo()
```

```
## R version 4.3.3 (2024-02-29)
## Platform: aarch64-apple-darwin23.2.0 (64-bit)
## Running under: macOS Sonoma 14.5
##
## Matrix products: default
## BLAS: /opt/homebrew/Cellar/openblas/0.3.27/lib/libopenblas-r0.3.27.dylib
## LAPACK: /opt/homebrew/Cellar/r/4.3.3/lib/R/lib/libRlapack.dylib; LAPACK version 3.11.0
##
## locale:
## [1] en_GB.UTF-8/en_GB.UTF-8/en_GB.UTF-8/C/en_GB.UTF-8/en_GB.UTF-8
##
## time zone: Europe/Amsterdam
## tzcode source: internal
##
## attached base packages:
## [1] stats      graphics  grDevices  utils      datasets
## [6] methods    base
##
## other attached packages:
## [1] readr_2.1.5      tibble_3.2.1
## [3] xtable_1.8-4     yaml_2.3.8
## [5] rprojroot_2.0.4  knitr_1.46
## [7] codecheck_0.1.0.9006 parsedate_1.3.1
## [9] R.cache_0.16.0   gh_1.4.1
##
## loaded via a namespace (and not attached):
## [1] xfun_0.44      rdflib_0.2.8    tzdb_0.4.0
## [4] vctrs_0.6.5    tools_4.3.3     generics_0.1.3
## [7] curl_5.2.1     parallel_4.3.3  fansi_1.0.6
## [10] pkgconfig_2.0.3 R.oo_1.26.0     redland_1.0.17-18
```

```

## [13] assertthat_0.2.1 lifecycle_1.0.4 git2r_0.33.0
## [16] compiler_4.3.3 atom4R_0.3-3 stringr_1.5.1
## [19] keyring_1.3.2 htmltools_0.5.8.1 pillar_1.9.0
## [22] crayon_1.5.2 whisker_0.4.1 tidyr_1.3.1
## [25] R.utils_2.12.3 cachem_1.1.0 zen4R_0.10
## [28] tidyselect_1.2.1 zip_2.3.1 digest_0.6.35
## [31] stringi_1.8.4 dplyr_1.1.4 purrr_1.0.2
## [34] fastmap_1.2.0 cli_3.6.2 magrittr_2.0.3
## [37] XML_3.99-0.16.1 crul_1.4.2 utf8_1.2.4
## [40] osfr_0.2.9 withr_3.0.0 bit64_4.0.5
## [43] roxygen2_7.3.1 rmarkdown_2.27 httr_1.4.7
## [46] bit_4.0.5 R.methodsS3_1.8.2 hms_1.1.3
## [49] memoise_2.0.1 evaluate_0.23 rlang_1.1.3
## [52] Rcpp_1.0.12 glue_1.7.0 httpcode_0.3.0
## [55] xml2_1.3.6 fauxpas_0.5.2 rorcid_0.7.0
## [58] vroom_1.6.5 jsonlite_1.8.8 R6_2.5.1
## [61] plyr_1.8.9 fs_1.6.4

```