

Supplementary material for “Current status and prospects of R-packages for the design of experiments”

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Table S1: A summary table for the CRAN task view that shows in order: the name of the task view, the full topic name, the total of packages, the total number of contributors, the average number of contributors, and the intra-connectivity. The intra-connectivity measures the percentage of packages that depends, suggest or imports at least one other package within the same task view. A low intra-connectivity suggests that development within the topic mostly occur in silos whilst high intra-connectivity suggests that there are more interactions within the topic. The row is ordered by the average number of contributors.

Name	Topic	# of packages	Total # of contributors	Average # of contributors	Intra-connectivity (%)
ExperimentalDesign	Design of Experiments (DoE) & Analysis of Experimental Data	105	192	2.23	30
SportsAnalytics	Sports Analytics	87	160	2.25	16
MedicalImaging	Medical Image Analysis	31	48	2.32	45
ChemPhys	Chemometrics and Computational Physics	73	144	2.45	25
ClinicalTrials	Clinical Trial Design, Monitoring, and Analysis	55	121	2.58	33
MetaAnalysis	Meta-Analysis	153	338	2.59	44
Distributions	Probability Distributions	250	580	2.88	46
Survival	Survival Analysis	234	556	2.95	71
ExtremeValue	Extreme Value Analysis	37	89	2.97	41
Hydrology	Hydrological Data and Modeling	96	236	3.03	20
Optimization	Optimization and Mathematical Programming	136	329	3.04	29
Pharmacokinetics	Analysis of Pharmacokinetic Data	27	72	3.04	19
TimeSeries	Time Series Analysis	333	791	3.08	57
OfficialStatistics	Official Statistics & Survey Statistics	129	328	3.11	38
NumericalMathematics	Numerical Mathematics	115	273	3.14	63

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Name	Topic	# of packages	Total # of contributors	Average # of contributors	Intra-connectivity (%)
DifferentialEquations	Differential Equations	26	71	3.27	54
Bayesian	Bayesian Inference	207	589	3.29	49
WebTechnologies	Web Technologies and Services	197	429	3.30	87
Tracking	Processing and Analysis of Tracking Data	47	146	3.34	45
Databases	Databases with R	41	94	3.34	78
NaturalLanguageProcessing	Natural Language Processing	55	129	3.35	62
CausalInference	Causal Inference	156	439	3.35	24
Psychometrics	Psychometric Models and Methods	225	561	3.46	70
Robust	Robust Statistical Methods	56	129	3.46	75
Cluster	Cluster Analysis & Finite Mixture Models	106	303	3.50	39
Econometrics	Econometrics	150	387	3.67	84
Finance	Empirical Finance	154	438	3.85	57
FunctionalData	Functional Data Analysis	39	130	3.97	59
MissingData	Missing Data	207	735	4.00	42
Epidemiology	Epidemiology	76	264	4.24	55
SpatioTemporal	Handling and Analyzing Spatio-Temporal Data	74	258	4.27	72
Spatial	Analysis of Spatial Data	192	608	4.32	82
GraphicalModels	Graphical Models	31	108	4.48	81
HighPerformanceComputing	High-Performance and Parallel Computing with R	86	315	4.64	62
Environmetrics	Analysis of Ecological and Environmental Data	92	386	5.11	74
MachineLearning	Machine Learning & Statistical Learning	101	494	5.73	50
TeachingStatistics	Teaching Statistics	45	237	6.51	58
ModelDeployment	Model Deployment with R	31	146	6.58	74

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Name	Topic	# of packages	Total # of contributors	Average # of contributors	Intra-connectivity (%)
ReproducibleResearch	Reproducible Research	101	540	6.72	76

!6}{ReproducibleResearch} & Reproducible Research & 101 & 540 & 6.72 & 76*\end{longtable}

Session information

R version 4.1.2 (2021-11-01)

Platform: x86_64-apple-darwin17.0 (64-bit)

locale: en_AU.UTF-8|en_AU.UTF-8|en_AU.UTF-8|C|en_AU.UTF-8|en_AU.UTF-8

attached base packages:

other attached packages:

- AsioHeaders(v.1.16.1-1)
- BH(v.1.75.0-0)
- DBI(v.1.1.1)
- DT(v.0.23)
- MASS(v.7.3-54)
- Matrix(v.1.3-4)
- R6(v.2.5.1)
- RColorBrewer(v.1.1-2)
- Rcpp(v.1.0.8)
- RcppArmadillo(v.0.10.8.1.0)
- RcppEigen(v.0.3.3.9.1)
- SnowballC(v.0.7.0)
- V8(v.4.2.0)
- anytime(v.0.3.9)
- askpass(v.1.1)
- assertthat(v.0.2.1)
- backports(v.1.3.0)
- base64enc(v.0.1-3)
- base64url(v.1.4)
- beeswarm(v.0.4.0)
- bit(v.4.0.4)
- bit64(v.4.0.5)
- blob(v.1.2.2)
- bookdown(v.0.24)
- broom(v.0.8.0)

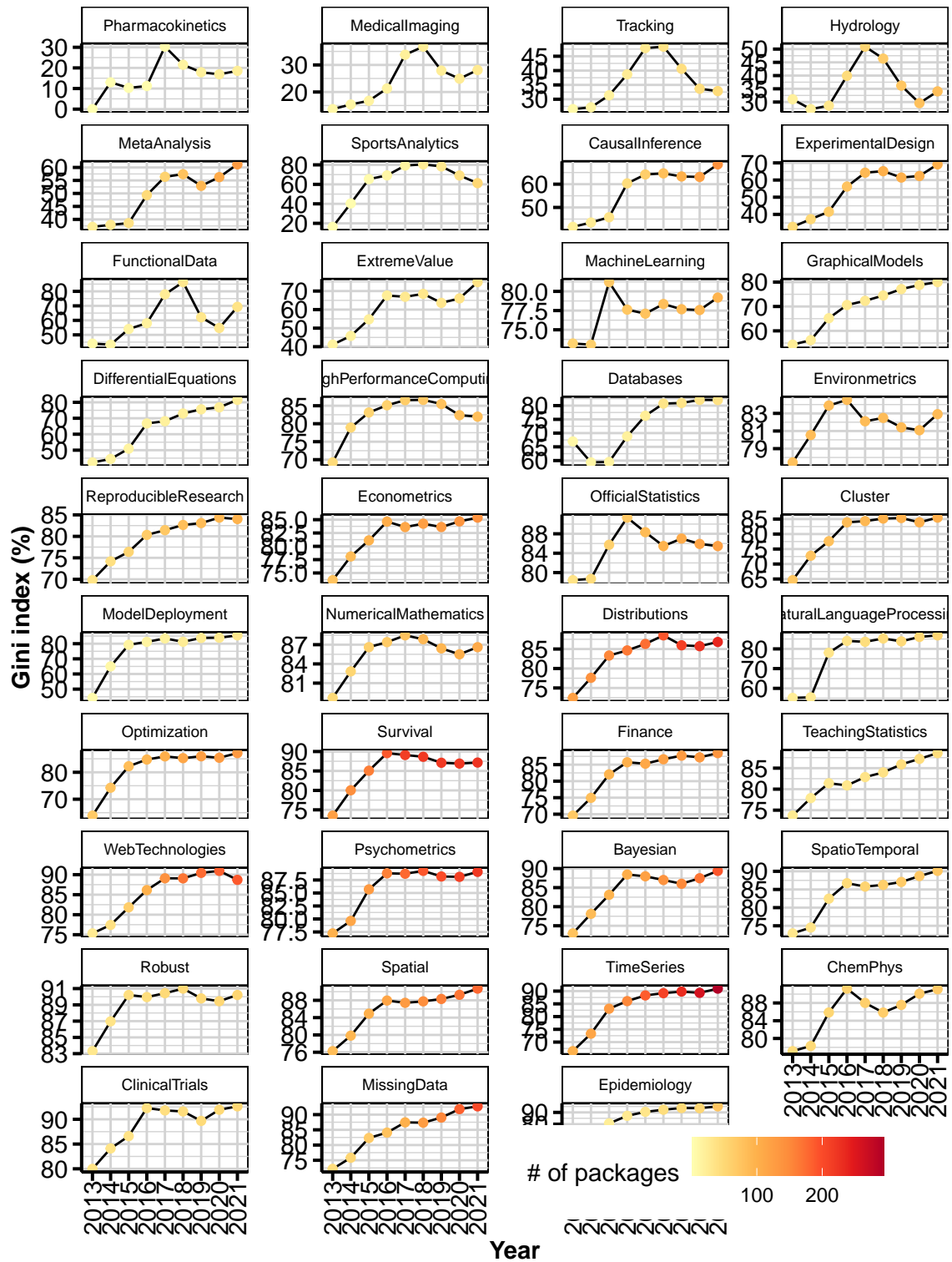


Figure S1: The points show the Gini index of the download counts by year faceted by CRAN task view with the color showing the number of packages. The grey line shows the distribution of the Gini index across years for all other CRAN task views. The facets are ordered by increasing value of the Gini index in 2021.

- `bslib(v.0.3.1)`
- `cachem(v.1.0.6)`
- `callr(v.3.7.0)`
- `cellranger(v.1.1.0)`
- `cli(v.3.3.0)`
- `clipr(v.0.7.1)`
- `coda(v.0.19-4)`
- `codetools(v.0.2-18)`
- `colorspace(v.2.0-2)`
- `commonmark(v.1.7)`
- `cpp11(v.0.4.2)`
- `cranlogs(v.2.1.1)`
- `crayon(v.1.4.2)`
- `crosstalk(v.1.2.0)`
- `ctv(v.0.9-2)`
- `curl(v.4.3.2)`
- `data.table(v.1.14.2)`
- `dbplyr(v.2.1.1)`
- `digest(v.0.6.29)`
- `distributional(v.0.2.2)`
- `dplyr(v.1.0.9)`
- `dtplyr(v.1.1.0)`
- `ellipsis(v.0.3.2)`
- `evaluate(v.0.14)`
- `fable(v.0.3.1)`
- `fabletools(v.0.3.1)`
- `fansi(v.1.0.2)`
- `farver(v.2.1.0)`
- `fastmap(v.1.1.0)`
- `feasts(v.0.2.2)`
- `fontawesome(v.0.2.2)`
- `forcats(v.0.5.1)`
- `fs(v.1.5.2)`
- `gargle(v.1.2.0)`
- `generics(v.0.1.2)`
- `ggbeeswarm(v.0.6.0)`
- `ggforce(v.0.3.3)`
- `ggnetwork(v.0.5.10)`
- `ggnewscale(v.0.4.5)`
- `ggplot2(v.3.3.5)`
- `ggraph(v.2.0.5)`
- `ggrepel(v.0.9.1)`
- `ggwordcloud(v.0.5.0)`
- `glue(v.1.6.1)`
- `googledrive(v.2.0.0)`
- `googlesheets4(v.1.0.0)`
- `graphlayouts(v.0.8.0)`
- `gridExtra(v.2.3)`
- `gtable(v.0.3.0)`
- `haven(v.2.4.3)`
- `here(v.1.0.1)`

- `highr(v.0.9)`
- `hms(v.1.1.1)`
- `htmltools(v.0.5.2)`
- `htmlwidgets(v.1.5.4)`
- `httpuv(v.1.6.3)`
- `httr(v.1.4.2)`
- `hunspell(v.3.0.1)`
- `ids(v.1.0.1)`
- `igraph(v.1.2.11)`
- `ineq(v.0.2-13)`
- `isoband(v.0.2.5)`
- `janeaustenr(v.0.1.5)`
- `jquerylib(v.0.1.4)`
- `jsonlite(v.1.7.3)`
- `kableExtra(v.1.3.4)`
- `knitr(v.1.37)`
- `labeling(v.0.4.2)`
- `later(v.1.3.0)`
- `lattice(v.0.20-45)`
- `lazyeval(v.0.2.2)`
- `lifecycle(v.1.0.1)`
- `lubridate(v.1.8.0)`
- `magrittr(v.2.0.2)`
- `mgcv(v.1.8-38)`
- `mime(v.0.12)`
- `modelr(v.0.1.8)`
- `munsell(v.0.5.0)`
- `network(v.1.17.2)`
- `networkD3(v.0.4)`
- `nlme(v.3.1-153)`
- `numDeriv(v.2016.8-1.1)`
- `openssl(v.2.0.2)`
- `pacman(v.0.5.1)`
- `pagedown(v.0.16)`
- `pander(v.0.6.6)`
- `parsedate(v.1.3.0)`
- `patchwork(v.1.1.1)`
- `pillar(v.1.7.0)`
- `pkgconfig(v.2.0.3)`
- `pkgsearch(v.3.1.0)`
- `plotly(v.4.10.0)`
- `pluralize(v.0.2.0)`
- `plyr(v.1.8.6)`
- `png(v.0.1-7)`
- `polyclip(v.1.10-0)`
- `prettyunits(v.1.1.1)`
- `processx(v.3.5.2)`
- `progress(v.1.2.2)`
- `progressr(v.0.9.0)`
- `promises(v.1.2.0.1)`
- `ps(v.1.6.0)`

- purrr(v.0.3.4)
- qdapRegex(v.0.7.5)
- rappdirs(v.0.3.3)
- readr(v.2.1.2)
- readxl(v.1.3.1)
- rematch(v.1.0.1)
- rematch2(v.2.1.2)
- remotes(v.2.4.2)
- renv(v.0.15.5)
- reprex(v.2.0.1)
- reshape(v.0.8.8)
- rlang(v.1.0.2)
- rmarkdown(v.2.11)
- rprojroot(v.2.0.2)
- rstudioapi(v.0.13)
- rticles(v.0.22)
- rvest(v.1.0.2)
- sass(v.0.4.0)
- scales(v.1.1.1)
- selectr(v.0.4-2)
- servr(v.0.24)
- shiny(v.1.7.1)
- slider(v.0.2.2)
- sna(v.2.7)
- sourcetools(v.0.1.7)
- splitstackshape(v.1.4.8)
- statnet.common(v.4.6.0)
- stringi(v.1.7.6)
- stringr(v.1.4.0)
- svglite(v.2.0.0)
- sys(v.3.4)
- systemfonts(v.1.0.3)
- tarchetypes(v.0.6.0)
- targets(v.0.12.0)
- tibble(v.3.1.6)
- tidygraph(v.1.2.0)
- tidyr(v.1.2.0)
- tidyselect(v.1.1.2)
- tidytext(v.0.3.2)
- tidyverse(v.1.3.1)
- tinytex(v.0.36)
- tokenizers(v.0.2.1)
- tsibble(v.1.1.0)
- tweenr(v.1.0.2)
- tzdb(v.0.2.0)
- utf8(v.1.2.2)
- uuid(v.1.0-3)
- vctrs(v.0.4.1)
- vipor(v.0.4.5)
- viridis(v.0.6.2)
- viridisLite(v.0.4.0)

- visNetwork(v.2.1.0)
- vroom(v.1.5.7)
- warp(v.0.2.0)
- webshot(v.0.5.2)
- websocket(v.1.4.1)
- withr(v.2.4.3)
- xfun(v.0.29)
- xml2(v.1.3.2)
- xtable(v.1.8-4)
- yaml(v.2.2.2)

loaded via a namespace (and not attached):

- utils(v.4.1.2)
- tools(v.4.1.2)
- compiler(v.4.1.2)
- datasets(v.4.1.2)
- base(v.4.1.2)
- grDevices(v.4.1.2)
- grid(v.4.1.2)
- methods(v.4.1.2)
- graphics(v.4.1.2)
- stats(v.4.1.2)