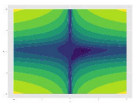
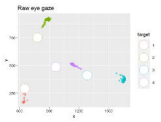
Computational Methods

madgrad v0.1.0: Implements MADGRAD, a Momentumized, Adaptive Dual Averaged Gradient method for stochastic optimization. See Defazio & Jelassi (2021) for details and README to get started.



TriDimRegression v1.0.0.0: Provides functions to fit 2D and 3D transformations using Stan which return posterior distributed for fitted parameters. There are vignettes on Transformation Matrices, Eye Gaze Mapping, and Comparing Faces. See README to get started.



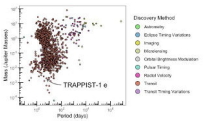
Data

AtmChile v0.1.0: Provides access to air quality and meteorological information from the Chile's National Air Quality System (S.I.N.C.A.). See README to get started.

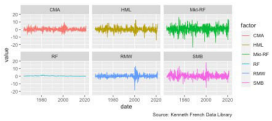
basemaps v0.0.1: Provides a lightweight interface to access spatial basemaps from open sources such as OpenStreetMap, Mapbox and others. See README to get started.

causaldata v0.1.1: Contains the data sets to run the example problems in the online causal inference textbooks The Effect and Causal Inference: What If and more.

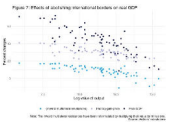
exoplanets v0.2.1: Provides access to NASA's Exoplanet Archive. See the vignette to get started.



franchdata v0.1.1: Provides access to Kenneth's French finance data library. See the vignette for basic usage.

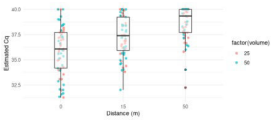


tradepolicy v0.5.0: Provides access to the data sets from Yotov et al. (2016) along with an online book containing commentary and the code to recreate the original analysis.



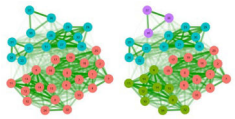
Genomics

artemis v1.0.7: Provides a modeling framework for the design and analysis of experiments collecting environmental DNA. There is an Introduction and also vignettes on Modeling eDNA and qPCR Data and Simulating eDNA Data.



MAGEE v1.0.0: Provides functions to perform variant set-based main effect tests, gene-environment interaction tests, and joint tests for association, as proposed in Wang et al. (2020). See the vignette for details.

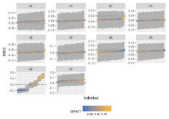
MultiIS v0.5.1: Implements a bioinformatical approach to detect the multiple integration of viral vectors within the same clone. See the vignette for how to use the package.



TopDom v0.10.0: Provides functions to identify topological domains in genomes from Hi-C sequence data as described in Shin et al. (2016). See README to get started.

Machine Learning

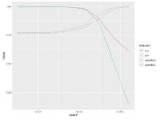
cjbart v0.1.0: Implements a tool for analyzing conjoint experiments using Bayesian Additive Regression Trees (BART), a machine learning method developed by Chipman & McCulloch (2010). See the vignette for examples.



fastText v1.0.1: Implements an interface to Facebook's fastText Library. See Bojanowski et al. (2017) for a description of the algorithm. There is a Benchmark vignette and an Introduction.

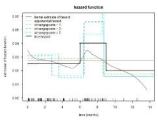
Medicine

altbx v1.1.1: Provides functions to estimate diagnosis performance (Sensitivity, Specificity, Positive predictive value, Negative predicted value) of a diagnostic test when there is no golden standard by estimating the attributable fraction using either a logitexponential model or a latent class model.



covidcast v0.4.2: Provides an interface to Delphi's COVIDcast Epidata including tools for data access, maps and time series plotting, and basic signal processing, and a collection of numerous indicators relevant to the COVID-19 pandemic in the United States. There is a Getting Started Guide, and vignettes on Computing Signal Correlations, Combining Data Sources, Manipulating Multiple Signals, and Plotting and Mapping Signals.

eventTrack v1.0.0: Implements the hybrid framework for event prediction in clinical trials as described in Fang & Zheng (2011). See the vignette for an example.

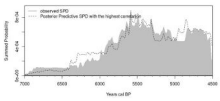


goldilocks v0.3.0: Implements the Goldilocks adaptive trial design for a time to event outcome using a piecewise exponential model and conjugate Gamma prior distributions as described in Broglio et al. (2014). See the vignette for an example.

Science

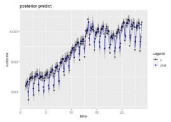
CopernicusDEM v1.0.1: Provides an interface to the Copernicus DEM Digital Elevation Model of the European Space Agency with 90 and 30 meters resolution using the AWS CLI command line tool. See the vignette for an example.

nimbleCarbon v0.1.2: Provides functions and a custom probability distribution for Bayesian analyses of radiocarbon dates within the `nimble` modeling framework, including a suite of functions for prior and posterior predictive checks for demographic inference as described in Crema & Shoda (2021). See the Introduction.

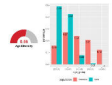


Statistics

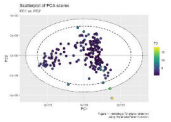
bayesmodels v0.1.0: Implements a framework to bring a number of Bayesian models into the `tidymodels` ecosystem. See the vignette for an overview.



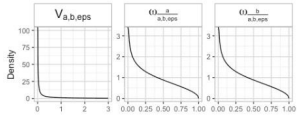
div v0.3.1: Provides functions to facilitate the analysis of teams in a corporate setting, assess the diversity per grade and job, search for bias and also provides methods to simulate the effects of bias. See De Brouwer (2021) and De Brouwer (2020) for background. Look here to get started.



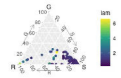
HotellingEllipse v0.1.1: Provides functions to compute the semi-axes lengths and coordinate points of Hotelling ellipse. See Bro & Smilde (2014) and Brereton (2016) for background. Look here and at the vignette for examples.



makemyprior v1.0.0: Provides tools to construct and visualize joint priors for variance parameters. Vignettes provide examples for Latin Square, i.i.d. models, neonatal mortality, and wheat breeding.



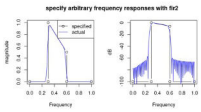
Rage v1.0.0: Provides functions for calculating life history metrics using matrix population models (MPMs) as described in Jones et al. (2021). There is a Getting Started Guide and vignettes on Vital Rates, Life History Traits, Deriving Age, and Ternary Plots.



unusualprofile v0.1.0: Provides functions to calculate Mahalanobis distance for every row of a set of outcome variables. There is an Introduction and a vignette on the calculations.

Time Series

gaignal v0.3-2: Implements the Octave signal package which provides a variety of signal processing tools, such as signal generation and measurement, correlation and convolution, filtering, filter design, filter analysis and conversion, power spectrum analysis, system identification, decimation and sample rate change, and windowing. See the vignette for an introduction.



legion v0.1.0 Provides functions for implementing multivariate state space models such as Vector Exponential Smoothing and Vector Error-Trend-Seasonal models, for time series analysis and forecasting as described in de Silva et al. (2010) There is a Function Overview and vignettes on Vector ES and Vector ETS.

Utilities

parsermd v0.1.2: Implements formal grammar and parser for R Markdown documents using the Boost Spirit X3 library. It also includes a collection of high level functions for working with the resulting abstract syntax tree. There is a Getting Started Guide and a vignette on Rmd Templates.

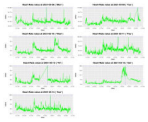
riskmetric v0.1.0: Provides facilities for assessing R packages against a number of metrics to help quantify their robustness. Look here for background on the package and here for background on the R Consortium, R Validation Hub project. There is a Quick Start Guide and a vignette on Extending riskmetric.

shinyvalidate v0.1.0: Provides functions to improve the user experience of Shiny apps by providing feedback when required inputs are missing, or input values are not valid. See README to get started.

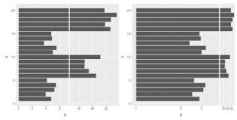
tfl v1.0: Provides tools to create structured, formatted HTML tables. See the vignette.

Visualization

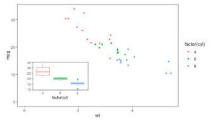
fitbitViz v1.0.1: Implements a connection to the Fitbit Web API to provide `ggplot2`, `Leaflet` and `Rayshader` visualizations. See the vignette for examples.



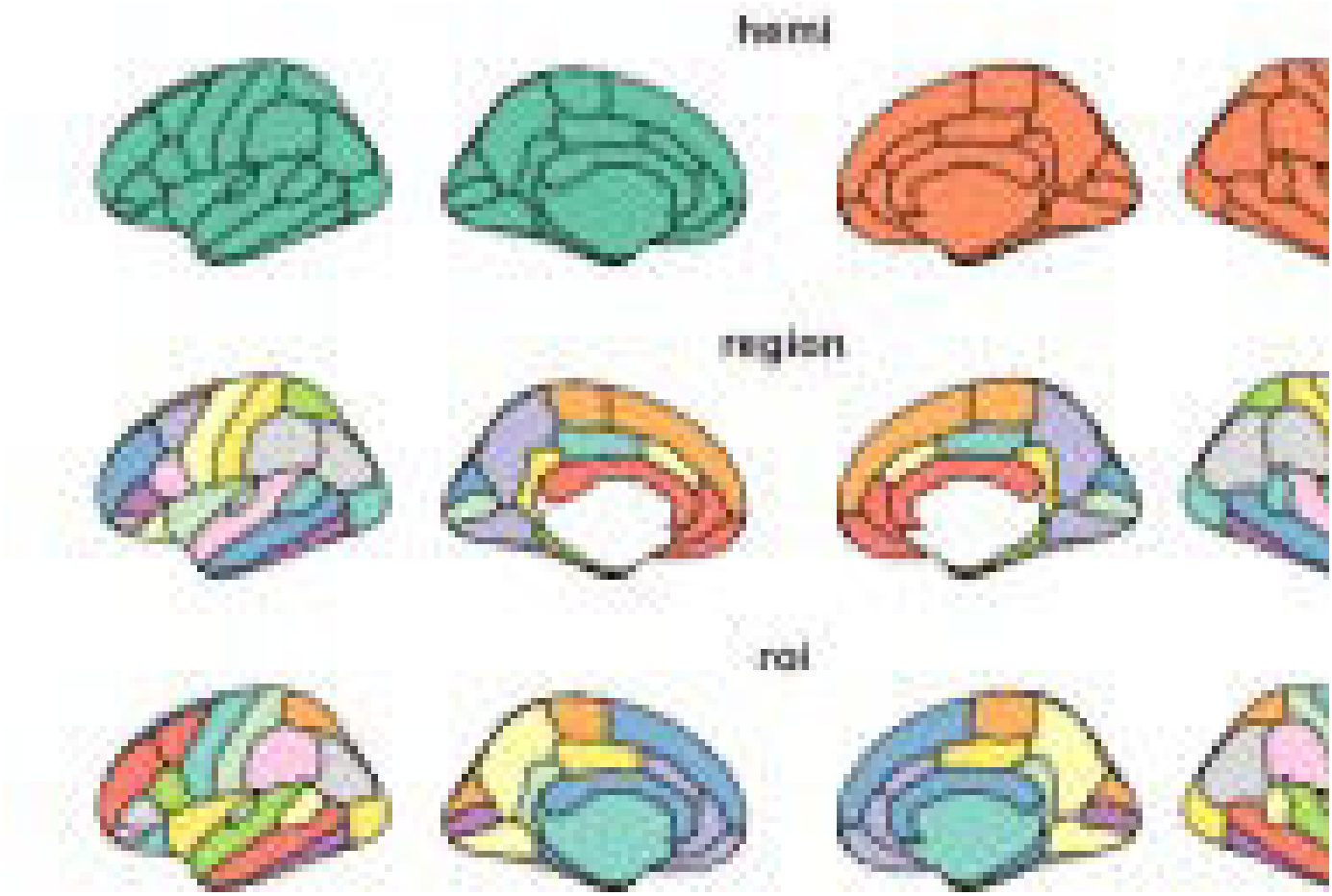
ggbreak v0.0.3: Implements scale functions for setting axis breaks for `ggplot2`. See the vignette.



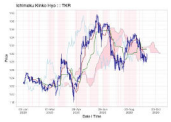
ggpp v0.4.0: Provides extensions to `ggplot2` to add inserts to plots using both native and npc data coordinates. See the vignette for examples.



ggseg v1.6.3: Implements a `ggplot` geom for plotting brain atlases using simple features. The largest component of the package is the data for two built-in atlases. See Mowinckel & Vidal-Piñeiro (2020) for background. There is an Introduction along with vignettes on external data, Freesurfer files, using atlases.

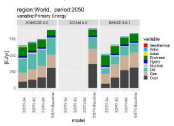


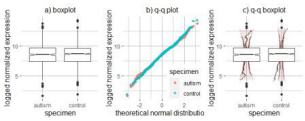
ichimoku v0.2.0: Implements Ichimoku Kinko Hyo, also commonly known as cloud charts, including static and interactive visualizations with tools for creating, backtesting and developing quantitative ichimoku strategies. There is a Reference and a vignette on Strategies.



liminal v0.1.2: Provides functions for composing interactive visualizations and creating linked interactive graphics for exploratory high-dimensional data analysis. See Lee et al. (2020) for background. There is a vignette on Exploring Non-linear Embeddings and another on the the geometry of Parameter Space.

mipplot v0.3.1: Provides generic functions to produce area, bar, box, and line plots following Integrated Assessment Modeling Consortium (IAMC) submission format in order to visualize climate migration scenarios. See the vignette for first steps.





ggboxplot v0.1.0: Implements Q-Q boxplots as an extension to ggplot2. There is a vignette on Basic Usage and another that provides Examples.