

quollr: An R Package for Visualizing 2D Models from Nonlinear Dimension Reduction in High Dimensional Space

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Abstract An abstract of less than 150 words.

```
library(quollr)
library(tibble)
library(knitr)
library(kableExtra)
library(ggplot2)

set.seed(20230531)
```

1 Introduction

2 Methodology

3 Implementation

The package can be installed from CRAN:

```
install.packages("quollr")
```

The development version can be installed from GitHub:

```
devtools::install_github("JayaniLakshika/quollr")
```

The following demonstration of the package's functionality assumes `quollr` has been loaded. We also want to load the built-in data sets `s_curve_noise_training` and `s_curve_noise_umap`.

Constructing the 2D model

Preprocessing

Binning data

Obtain bin centroids/ means

Triangulate bin centroids/ means

Lifting the model into high dimensions

Tuning model parameters

Compute MSE

Visualizations

2D model visualization

p-D model visualization

Prediction

Tests

All functions have tests written and implemented using the `testthat` (Wickham 2011) in R.

4 Application

5 Conclusion

6 Acknowledgements

This article is created using **knitr** (Xie 2015) and **rmarkdown** (Xie, Allaire, and Grolemund 2018) in R with the **rjtools::rjournal_article** template. The source code for reproducing this paper can be found at: <https://github.com/JayaniLakshika/paper-quollr>.

References

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