Species & genus plant classification with NEON hyperspectral data

Victoria Scholl* Maxwell B. Joseph†

Abstract

Text of abstract

Keywords: keyword 1; keyword 2; keyword 3

Highlights: These are the highlights.

1 Introduction

The National Ecological Observatory Network (NEON) is a valuable source of publicly available ecological data across the United States (Keller et al. 2008).

We have extracted all NEON AOP hyperspectral data for every mapped stem in NEON plots where field data and airborne remote sensing data were collected during the same year.

Here's the code to extract the spectra: https://gist.github.com/mbjoseph/5c18781e508460e14f64193571b98b7d

We used a machine learning approach to evaluate plant identification potential using the hyperspectral data at multiple taxonomic resolutions: species and genus levels.

Species classification is an active research area (Scholl et al. 2020).

*victoria.scholl@colorado.edu, Earth Lab and Geography Dept., University of Colorado, Boulder, CO 80303, USA
†maxwell.b.joseph@colorado.edu, Earth Lab, University of Colorado, Boulder, CO 80303, USA

2 Background

3 Methods

3.1 Data cleaning

3.2 Species classification

3.3 Genus classification

Same setup as species classification, but used the genus as each class label.

4 Results

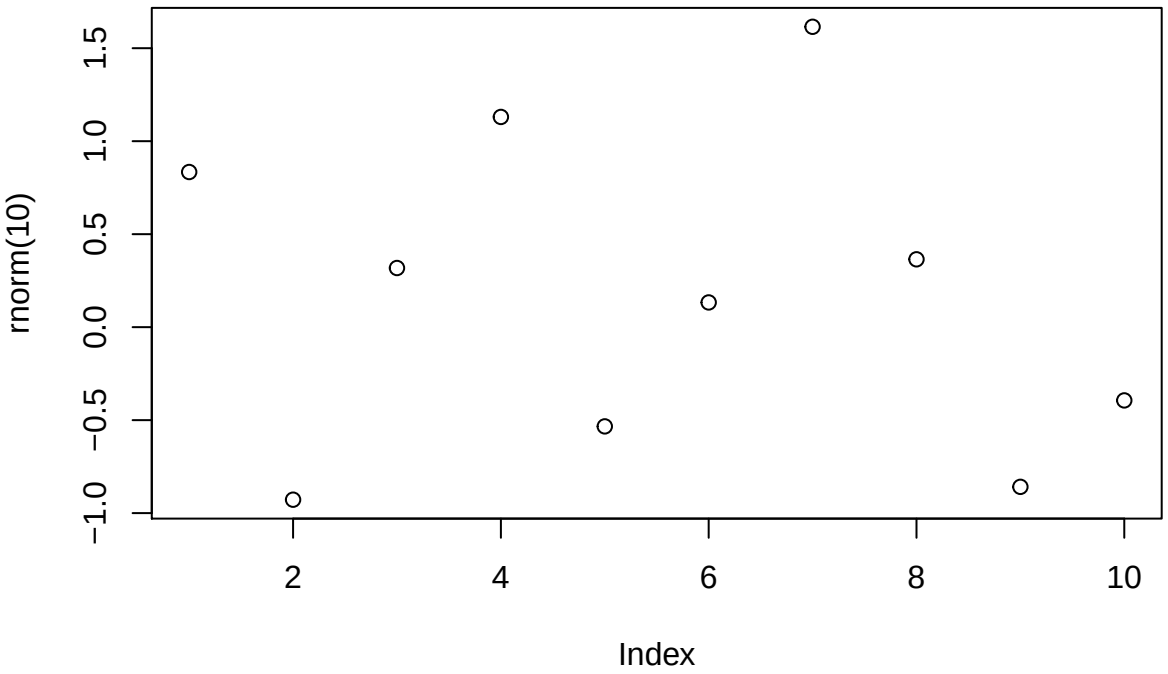

Figure 1: A plot of random numbers

Figure 1 shows how we can have a caption and cross-reference for a plot

Here is an example of inline code 3.14 in the middle of a sentence.

5 Discussion

6 Conclusion

7 Acknowledgements

Max has cool ideas and knows many R tricks

8 References

Keller, M., D. S. Schimel, W. W. Hargrove, and F. M. Hoffman. 2008. A continental strategy for the national ecological observatory network. The Ecological Society of America: 282-284.

Scholl, V. M., M. E. Cattau, M. B. Joseph, and J. K. Balch. 2020. Integrating national ecological observatory network (neon) airborne remote sensing and in-situ data for optimal tree species classification. Remote Sensing 12:1414.

Figure legends

Figure 1

Figure 1 info...

Figure 2

It ain't much...

Figures

Figure 1

Figure 2


When you can't use ggplot but you still manage to do a nice graph in Excel
HIGH IMPACT PhD MEMES
It ain't much, but it's honest work