

Package ‘treetop’

February 4, 2022

Type Package

Title A Shiny-Based Application for Extracting Forest Information from LiDAR Data

Version 0.0.4

Description Set of tools implemented into a shiny-based application for extracting and analyzing individual tree forest attributes from LiDAR (Light Detection and Ranging) data.

License GPL-3

Encoding UTF-8

Depends R (>= 4.0)

Imports shiny, RColorBrewer, spatstat.geom, spatstat.core, raster, rasterVis, sp, geometry, rgdal, rgeos, rgl, lidR, pryr, sf, stars

Suggests rmarkdown

RoxygenNote 7.1.2

URL <https://github.com/carlos-alberto-silva/weblidar-treetop>

BugReports <https://github.com/carlos-alberto-silva/weblidar-treetop/issues>

NeedsCompilation no

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launchApp	<i>Launch treetop application</i>
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Description

This function launch the treetop application.

Usage

```
launchApp(...)
```

Arguments

... additional parameters from the [runApp](#) function in the *shiny* package.

Details

The treetop shiny app will pop up for LiDAR data visualization, processing and analysis. Import a LiDAR-derived Canopy Height Model (CHM, as .tif, .asc or .img format) for custom data processing. Interrupt R to stop the application (usually by pressing Ctrl+C or Esc). Individual trees are detected and their crown are delineated using methods described in Silva et al. (2016) and implemented in the [silva2016](#) function in the *lidR* (Roussel et al. 2020) package.

Value

This function does not return.

References

Chang, W., Cheng, J., Allaire, J. J., Xie, Y., & McPherson, J. (2021). shiny: Web Application Framework for R. <https://CRAN.R-project.org/package=shiny>

Leite, R.V.; Silva, C.A.; Mohan, M.; Cardil, A.; Almeida, D.R.A.d.; Carvalho, S.d.P.C.e; Jaafar, W.S.W.M.; Guerra-Hernández, J.; Weiskittel, A.; Hudak, A.T.; Broadbent, E.N.; Prata, G.; Valbuena, R.; Leite, H.G.; Taquetti, M.F.; Soares, A.A.V.; Scolforo, H.F.; Amaral, C.H.d.; Dalla Corte, A.P.; Klauberg, C. (2020). Individual Tree Attribute Estimation and Uniformity Assessment in Fast-Growing Eucalyptus spp. Forest Plantations Using Lidar and Linear Mixed-Effects Models. Remote Sens. 12, 3599. doi: [10.3390/rs12213599](https://doi.org/10.3390/rs12213599)

Roussel, J.R., Auty, D., Coops, N. C., Tompalski, P., Goodbody, T. R. H., Sánchez Meador, A., Bourdon, J.F., De Boissieu, F., Achim, A. (2020). lidR : An R package for analysis of Airborne Laser Scanning (ALS) data. Remote Sensing of Environment, 251, 112061. doi: [10.1016/j.rse.2020.112061](https://doi.org/10.1016/j.rse.2020.112061)

Silva, C. A., Hudak, A. T., Vierling, L. A., Loudermilk, E. L., O'Brien, J. J., Hiers, J. K., Khosravipour, A. (2016). Imputation of Individual Longleaf Pine (*Pinus palustris* Mill.) Tree Attributes from Field and LiDAR Data. Canadian Journal of Remote Sensing, 42(5), 554–573. doi: [10.1080/07038992.2016.1196582](https://doi.org/10.1080/07038992.2016.1196582)

Examples

```
## Not run:  
  
# Launch treetop application  
treetop::launchApp(launch.browser = TRUE)  
  
## End(Not run)
```

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