Patrick **Schratz**

RESEARCHER · DATA SCIENTIST

Friedrich-Schiller-University Jena, Department of Geography, GIScience group

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To which open-source project do you contribute?

Work Experience

Ludwig-Maximilian-University Munich   *Munich, Germany*

RESEARCHER   *May 2019 - Current*

Friedrich-Schiller-University Jena   *Jena, Germany*

RESEARCHER (PhD CANDIDATE)   *May 2019 - Current*

Friedrich-Schiller-University Jena   *Jena, Germany*

RESEARCHER (PhD CANDIDATE)   *Oct. 2016 - April 2019*

- Project: EU LIFE Healthy Forest
- Description: "Early detection and advanced management systems to reduce forest decline caused by invasive and pathogenic agents"
- Statistical and machine-learning data analysis

Chinese Academy of Forestry   *Beijing, China*

RESEARCH INTERN   *Aug. 2015 - Oct. 2015*

- Project work within ESA-MOST Forest DRAGON 3
- Schmullius et al. (2016): Decadal trends of Northeastern Forests in China from Earth Observation Synergy (see also 'publications')

TU Ilmenau   *Ilmenau, Thüringen*

RESEARCH ASSISTANT   *Feb. 2014 - Apr. 2015*

- GIS support within Obschonka et al. (2015): "Entrepreneurial Regions: Do Macro-Psychological Cultural Characteristics of Regions Help Solve the "Knowledge Paradox" of Economics?"

Centre for Geographical Analysis   *Stellenbosch, South Africa*

INTERN   *Mar. 2014 - May 2014*

- CGA Stellenbosch
- Validation of a country wide land cover map for South Africa

Friedrich-Schiller-University Jena   *Jena, Germany*

TEACHING ASSISTANT   *Oct. 2013 - Feb. 2014*

- Tutorial on image processing for 2nd year undergraduates

Skills

Programming languages   R, LaTeX, Git, HTML, CSS

Fields of expertise
- Machine & statistical learning
- (Geo)statistics
- Parallelization
- R package development
- UNIX administration (HPC)

Languages   German, English

Education

Friedrich-Schiller-University Jena   *Jena, Germany*

M.Sc. in Geoinformatics   *Oct. 2014 - Sep. 2016*

- Thesis title: "Modeling the Spatial Distribution of Hail Damage in Pine Plantations of Northern Spain as a Major Risk Factor for Forest Disease" (`https://zenodo.org/record/814262`)

Friedrich-Schiller-University Jena   *Jena, Germany*

B.Sc. in Geography   *Oct. 2011 - Sep. 2014*

- Specialization in Remote Sensing and Geoinformatics
- Thesis title: "Investigation of the ASAR BIOMASAR GSV maps from 2005 and 2010 using optical satellite data at different temporal and spatial resolution in Northeast China"

Software Development

R packages   *Github*

Selected Packages

Name	Role	Link
mlr	Author, Maintainer	`https://github.com/mlr-org/mlr`
oddsratio	Author, Maintainer, Creator	`https://github.com/pat-s/oddsratio`
RQGIS	Author	`https://github.com/jannes-m/RQGIS`
sperrorest	Author, Maintainer	`https://github.com/pat-s/sperrorest`
xaringan	Author	`https://github.com/yihui/xaringan`
tic	Author	`https://github.com/ropenscilabs/tic`

Arch User Repository (AUR) packages   *AUR*

Maintainer

Name	Link
arara	`https://aur.archlinux.org/packages/arara/`
nodejs-decktape	`https://aur.archlinux.org/packages/nodejs-decktape/`
notion-app	`https://aur.archlinux.org/packages/notion-app/`
rstudio-desktop-preview-bin	`https://aur.archlinux.org/packages/rstudio-desktop-preview-bin/`
saga-gis-ltr	`https://aur.archlinux.org/packages/saga-gis-ltr/`

Miscellaneous Activities

HPC Cluster Administration   *University of Jena, Germany*

GIScience group   *2016 - Present*

- CentOS
- Ganglia
- OHPC
- Slurm
- Spack
- Warewulf

Mentor for International Students and Refugees   *University of Jena, Germany*

Office of international affairs   *2017 - Present*

Peer-reviewed Publications
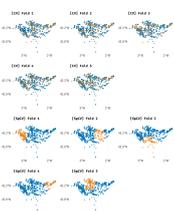
Schratz, P., Muenchow, J., Richter, J., Iturritxa, E. and Brenning, A. (2019)

Hyperparameter tuning and performance assessment of statistical and machine-learning models using spatial data

Ecological Modelling · URL

Muenchow, J., Schratz, P. and Brenning, A. (2017)

RQGIS: Integrating R with QGIS for Statistical Geocomputing

R Journal · URL

R Package RQGIS: Integrating R with QGIS

Conference Publications
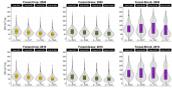
Schmullius, C., Balling, J, Schratz, P. et al. (2016)

Decadal trends of Northeastern Forests in China from Earth Observation Synergy

ESA MOST DRAGON 3 Conference Proceedings, Wuhan · DOI

Mixed pixel investigation of Growing Stock Volume (GSV) derivations derived from the BIOMASAR algorithm.

Teaching

University of Jena
Jena, Germany

M.Sc. Geoinformatics & B.Sc. Geography

Oct. 2016 - Current

Module name	Term	Role
GEO 311	WS 16/17	Teaching assistant
GEO 411	WS 17/18	Teaching assistant

University of Munich
Jena, Germany

Münchner R Kurse

Nov. 2018 - Current

- R Basiskurs: http://www.muenchner-r-kurse.de/r-basiskurs/
- ggplot2: http://www.muenchner-r-kurse.de/fortgeschrittene-visualisierung-mit-ggplot2/