Prof. Leonardo Uieda

Curriculum Vitæ Summary

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Research Group: www.compgeolab.org

Rua do Matão, 1226. São Paulo - SP. Brazil. 05508-090
Instituto de Astronomia, Geofísica e Ciências Atmosféricas
Departamento de Geofísica
Universidade de São Paulo

Professional Appointments

2023–on **Professor Doutor**, Universidade de São Paulo, Brazil

2019–2023 **Lecturer**, University of Liverpool, UK

2017–2019 **Visiting Researcher**, University of Hawai'i at Mānoa, USA

2014–2018 **Professor Assistente**, Universidade do Estado do Rio de Janeiro, Brazil

Community Service

2022–on **Board Member**, Software Underground, softwareunderground.org

2024–on **Advisory Council Member**, EarthArXiv, eartharxiv.org

2022–2023 **Advisory Committee Member**, pyOpenSci, www.pyopensci.org

2019–2022 **Topic Editor**, Journal of Open Source Software, joss.theoj.org

Education

2011–2016 **PhD in Geophysics**, Observatório Nacional, Brazil. doi:10.6084/m9.figshare.16883689

2010–2011 **MSc in Geophysics**, Observatório Nacional, Brazil. doi:10.6084/m9.figshare.16882300

2004–2009 **BSc in Geophysics**, Universidade de São Paulo, Brazil. doi:10.6084/m9.figshare.963547

Open Research Software

2010–on **Fatiando a Terra** | www.fatiando.org
Python tools for geophysical data processing, forward modeling, and inversion
Role: Project founder, core developer, Steering Council Member

2017–on **The Generic Mapping Tools (GMT)** | www.generic-mapping-tools.org
A data processing and mapping toolbox for the Earth, Ocean, and Planetary Science
Role: Community stewardship advisor, set up the website + forum + GitHub workflow

2022–on **xlandsat** | www.compgeolab.org/xlandsat
Load Landsat remote sensing scenes in Python and xarray
Role: Creator and sole developer

2017–2021 **PyGMT** | www.pygmt.org
A Python interface for the Generic Mapping Tools
Role: Project founder, developer, advisor

2009–2016 **Tesseroids** | tesseroids.leouieda.com
Forward modeling of gravitational fields in spherical coordinates
Role: Creator and sole developer

Open Educational Resources

2022 **A Quick Introduction to Machine Learning**. leouieda/ml-intro.

2023 **Remote Sensing with Python**. leouieda/remote-sensing.

2023 **Lithosphere Dynamics with Python**. leouieda/lithosphere.

2022 **Terrestrial Gravimetry with Python**. leouieda/gravity-processing.

Grants and Fellowships

2022–on **Towards individual-grain paleomagnetism: Translating regional-scale geophysics to the nascent field of magnetic microscopy**.
Royal Society. Uieda, L (PI); Trindade, RIF. Award: IES\R3\213141

2020–on **A Sustainable Plan for the Future of the Generic Mapping Tools**.
NSF-EAR. Wessel, P (PI); Uieda, L. Award: 1948602.

2020–2023 **SSI Fellowship Programme**.
Software Sustainability Institute. Uieda, L (PI). Award: software.ac.uk/about/fellows

2018–2024 **The EarthScope/GMT Analysis and Visualization Toolbox**.
NSF-EAR. Wessel, P (PI); Uieda, L; Smith-Konter, B. Award: 1829371.

Selected Invited Presentations

2021 **Design useful tools that do one thing well and work together: rediscovering the UNIX philosophy while building the Fatiando a Terra project**.
AGU 2021. Uieda, L; Li, L; Soler, SR; Pesce, A. fatiando/agu2021.

Open-science for gravimetry: tools, challenges, and opportunities.
GFZ Helmholtz Centre Potsdam. Uieda, L; Soler, SR; Pesce, A. leouieda/2021-06-22-gfz.

Fatiando a Terra: Open-source tools for geophysics.
Geophysical Society of Houston. Uieda, L; Soler, SR; Pesce, A. fatiando/2021-gsh.

2020 **Geophysical research powered by open-source**.
Christian Albrechts Universität zu Kiel. Uieda, L. leouieda/2020-07-01-kiel.

Publication Highlights

2024 **Full vector inversion of magnetic microscopy images using Euler deconvolution as prior information**.
Souza-Junior, GF; Uieda, L; *et al.* Geochemistry, Geophysics, Geosystems. doi:10.1029/2023GC011082
Open science: compgeolab/micromag-euler-dipole | doi:10.6084/m9.figshare.22672978

2021 **Gradient-boosted equivalent sources**.
Soler, SR; Uieda, L. Geophysical Journal International. doi:10.1093/gji/ggab297
Open science: compgeolab/eql-gradient-boosted | doi:10.6084/m9.figshare.13604360

2020 **Pooch: A friend to fetch your data files**.
Uieda, L; Soler, SR; Rampin, R; van Kemenade, H; *et al.* Journal of Open Source Software. doi:10.21105/joss.01943
Open science: fatiando/pooch | doi:10.5281/zenodo.3515030

2019 **The Generic Mapping Tools, Version 6**.
Wessel, P; Luis, J; Uieda, L; *et al.* Geochemistry, Geophysics, Geosystems. doi:10.1029/2019GC008515
Open science: GenericMappingTools/gmt

2019 **Gravitational field calculation in spherical coordinates using variable densities in depth**.
Soler, SR; Pesce, A; Gimenez, ME; Uieda, L. Geophysical Journal International. doi:10.1093/gji/ggz277
Open science: pinga-lab/tesseroid-variable-density | doi:10.6084/m9.figshare.8239622

2018 **Verde: Processing and gridding spatial data using Green's functions**.
Uieda, L. Journal of Open Source Software. doi:10.21105/joss.00957
Open science: fatiando/verde | doi:10.5281/zenodo.1478244

2017 **Fast non-linear gravity inversion in spherical coordinates with application to the South American Moho**.
Uieda, L; Barbosa, VCF. Geophysical Journal International. doi:10.1093/gji/ggw390
Open science: pinga-lab/paper-moho-inversion-tesseroids | doi:10.6084/m9.figshare.3987267

2016 **Tesseroids: forward modeling gravitational fields in spherical coordinates**.
Uieda, L; Barbosa, VCF; Braitenberg, C. Geophysics. doi:10.1190/geo2015-0204.1
Open science: pinga-lab/paper-tesseroids | doi:10.6084/m9.figshare.786514

2012 **Robust 3D gravity gradient inversion by planting anomalous densities**.
Geophysics. Uieda, L; Barbosa, VCF. doi:10.1190/geo2011-0388.1
Open science: pinga-lab/paper-planting-densities | doi:10.6084/m9.figshare.91574