Prof. Leonardo Uieda

Curriculum Vitæ Summary

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

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

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

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

2019–2022 **Advisory Council Member**, EarthArXiv, eartharxiv.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 **PyGMT** | www.pygmt.org
A Python interface for the Generic Mapping Tools
Role: Project founder, developer, advisor

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

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**. GitHub: leouieda/ml-intro.

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

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

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

Grants and Fellowships

2022–2024 **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 **SSI Fellowship Programme**.
Software Sustainability Institute. Uieda, L (PI). Award: software.ac.uk/about/fellows

2020–2024 **A Sustainable Plan for the Future of the Generic Mapping Tools**.
NSF-EAR. Wessel, P (PI); Uieda, L. Award: 1948602.

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. GitHub: fatiando/agu2021.

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

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

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

Publication Highlights

2023 **Full vector inversion of magnetic microscopy images using Euler deconvolution as a priori information**.
EarthArXiv. DOI: 10.31223/X5QD5Z.
Souza Junior, GF; Uieda, L; Trindade, RIF; Carmo, J; Fu, R. GitHub: compgeolab/micromag-euler-dipole.

2021 **Gradient-boosted equivalent sources**.
Geophysical Journal International. DOI: 10.1093/gji/ggab297. Preprint: 10.31223/X58G7C.
Soler, SR; Uieda, L. GitHub: compgeolab/eql-gradient-boosted.

2020 **Pooch: A friend to fetch your data files**.
Journal of Open Source Software. DOI: 10.21105/joss.01943.
Uieda, L; Soler, SR; Rampin, R; van Kemenade, H; Turk, M; *et al*. GitHub: fatiando/pooch.

2019 **The Generic Mapping Tools, Version 6**.
Geochemistry, Geophysics, Geosystems. DOI: 10.1029/2019GC008515.
Wessel, P; Luis, J; Uieda, L; Scharroo, R; Wobbe, F; Smith, WHF; Tian, D.

2019 **Gravitational field calculation in spherical coordinates using variable densities in depth**.
Geophysical Journal International. DOI: 10.1093/gji/ggz277. Preprint: 10.31223/osf.io/3548g.
Soler, SR; Pesce, A; Gimenez, ME; Uieda, L. GitHub: pinga-lab/tesseroid-variable-density.

2019 **Efficient 3D large-scale forward-modeling and inversion of gravitational fields in spherical coordinates with application to lunar mascons**.
Journal of Geophysical Research: Solid Earth. DOI: 10.1029/2019JB017691. Preprint: 10.31223/osf.io/dzf9j.
Zhao, G; Chen, B; Uieda, L; Liu, J; Kaban, MK; Chen, L; Guo, R.

2018 **Verde: Processing and gridding spatial data using Green's functions**.
Journal of Open Source Software. DOI: 10.21105/joss.00957.
Uieda, L. GitHub: fatiando/verde.

2017 **Fast non-linear gravity inversion in spherical coordinates with application to the South American Moho**.
Geophysical Journal International. DOI: 10.1093/gji/ggw390. Preprint: 10.31223/osf.io/9ba4m.
Uieda, L; Barbosa, VCF. GitHub: pinga-lab/paper-moho-inversion-tesseroids.

2016 **Tesseroids: forward modeling gravitational fields in spherical coordinates**.
Geophysics. DOI: 10.1190/geo2015-0204.1.
Uieda, L; Barbosa, VCF; Braitenberg, C. GitHub: pinga-lab/paper-tesseroids.