PERSONAL INFORMATION:

## Pedro Henrique Muniz Lima, Dr, MSc, BSc

**Nationality:** Brazilian

**Date of birth:** 09/01/1988

**Address:** Universitaetsstraße. 7; 1010; Vienna; Austria
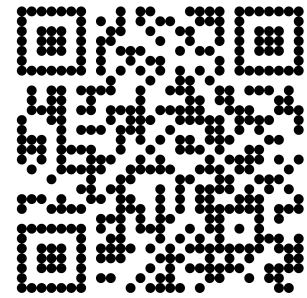
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🌐 https://munizlimap15.github.io/Pedrolima/

in https://www.linkedin.com/in/pedrolima-ds/

R⁶ https://www.researchgate.net/profile/Pedro-Lima-2/

iD https://orcid.org/0000-0003-2429-3752

Scan to my website

# Education

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|---|---|
| 2015 – 2022 | **PhD in Natural Sciences, Geography - University of Vienna**<br>Dept. of Geography and Regional Research, Geomorphological Systems and Risk Research Group (ENGAGE).<br>**PhD. Thesis title:** *"Landslide susceptibility mapping at varied scales. Methodological designs adaptations to cope with common input data related challenges".*<br>**Advisor:** Univ.-Prof. Dipl.-Geogr. Dr. Thomas Glade<br>**Link:** https://ubdata.univie.ac.at/AC16738442 |
| 2013 – 2015 | **MSc, Geography - Federal University of Rio de Janeiro, UFRJ, Brazil**<br>Dept. of Geography, Institute of Geosciences.<br>**MSc. Thesis title:** *"The Drainage Efficiency Index (DEI) as a subsidy for a spatial analysis of areas susceptible to mass-movements occurrence".* (Title translated from Portuguese)<br>**Advisor:** Univ.-Prof. Dr. Manoel do Couto Fernandes and Univ.-Prof. Dr. Ana Luiza Coelho Netto<br>**Link:** http://objdig.ufrj.br/16/teses/831103.pdf |
| 2007 – 2012 | **BSc, Biology, with a minor in environmental Sciences - Fluminense Federal University, UFF, Brazil**<br>Dept. of Biology, Institute of Biology.<br>**BSc. Monography title:** *"Extreme rainfall events and sediment production in two different forested catchments in the Tijuca Massif - RJ: influences of recovering landslide, roads, and trails on rates of sediment yield and transport".* (Title translated from Portuguese)<br>**Advisor:** Univ.-Prof. Dr. Ana Luiza Coelho Netto |

# Relevant work experience

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|---|---|
| 2021 – ···· | **Researcher** at Universität Wien    🌐 ENGAGE- UNVIE<br>Project leader: Univ.-Prof. Dipl.-Geogr. Dr. Thomas GladeDepartment of Geography and Regional Research; ENGAGE - Geomorphological Systems and Risk Research<br><br>**Main activities include:** Handling and integrating a landslide database into predictive modeling using statistical techniques. In addition to these tasks, my contributions extend to writing publications and actively participating in relevant conferences. Tech tools used on a daily basis: ArcGIS, R, QGIS, and Git. |

## Relevant work experience (continued)

2019 – 2021    **Data Scientist** at Ubiq.ai    🌐 [www.ubiq.ai/](www.ubiq.ai/)

**Main activities include:** Development of dynamic spatiotemporal models for predicting shared mobility demand (cars and moped fleets) for cities like Berlin, Budapest, Vienna, Dubai, and Washington DC. A significant part of my work involves the pre-processing, engineering, and preparation of large databases for the demand-prediction pipeline. Tech tools used on a daily basis: R, SQL, FME, QGIS, and Git.

2019 – 2019    **Visiting researcher,** EURAC, Inst. for Earth Observation.    🌐 [www.eurac.edu/](www.eurac.edu/)

2015 – 2019    **External PhD student** at Universität Wien; Department of Geography and Regional Research; ENGAGE - Geomorphological Systems and Risk Research    🌐 [ENGAGE-UNVIE](ENGAGE-UNVIE)

Scholarship holder from the *Conselho Nacional de Desenvolvimento Científico e Tecnológico*, CNPq, Brazil.

2013 – 2013    **Environmental Analyst** at *Terra Nova Escritório de Projetos Sociais e Ambientais.*

2012 – 2012    **Project employee; GIS especialist** at *"Geological-Geotechnical mapping update and evaluation of slope stability of the CNAAA nuclear power plant, Angra Dos Reis, RJ, Brazil".* (Title translated from Portuguese)

2011 – 2012    **Project employee; GIS especialist** at *"Landslide susceptibility and risk mapping of the Angra dos Reis municipality, RJ, Brazil"* (Title translated from Portuguese)

## Skills

Languages    🔖 Portuguese - Mother language.
English - Fluent in spoken and written.
German - Good comprehension skills, while lower communication ability.

Computer skills    🔖 ℝ -R; 🐍 -Python; 🗄 -SQL; 🐙 -Git; LaTeX; Microsoft Office; E-Learning; 🌐 - GIS (ArcGIS, ArcPRO, QGIS); numerical modeling (e.g., *r.avaflow*) …

## Teaching contributions

2019 & 2022    University of Vienna: Basics in Earth Surface Dynamics and Management (290023 VU )

2020    University of Vienna: Current research spectrum in geomorphology

University of Vienna: Scientific Progress in Geomorphology (290212 VU)

2019    University of Vienna: Modelling in Physical Geography (290131 UE)

2014    Federal University of Rio de Janeiro: Hidrologia aplicada (*Applied hydrology*) (IGG-603)

## Research Publications

### Journal Articles

1. **Lima, P.**, Steger, S., Glade, T. & Mergili, M. Conventional data-driven landslide susceptibility models may only tell us half of the story: Potential underestimation of landslide impact areas depending on the modeling design. *Geomorphology,* 108638. ISSN: 0169-555X. 🔗 [http://www.sciencedirect.com/science/article/pii/S0169555X23000582](http://www.sciencedirect.com/science/article/pii/S0169555X23000582) (2023).

**2**   **Lima**, **P.**, Steger, S., Murillo-García, F. & Glade, T. Literature review and bibliometric analysis on data-driven assessment of landslide susceptibility. *Journal of Mountain Sciences.* **19,** 1670–1698. ISSN: 1612-5118. 🔗 https://doi.org/10.1007/s11629-021-7254-9 (2022).

**3**   **Lima**, **P.**, Steger, S. & Glade, T. Counteracting flawed landslide data in statistically based landslide susceptibility modelling for very large areas: a national-scale assessment for Austria. *Landslides.* ISSN: 1612-5118. 🔗 https://doi.org/10.1007/s10346-021-01693-7 (2021).

**4**   Lin, Q., **Lima**, **P.**, Steger, S., Glade, T., Jiang, T., Zhang, J., Liu, T. & Wang, Y. National-scale data-driven rainfall induced landslide susceptibility mapping for China by accounting for incomplete landslide data. *Geoscience Frontiers* **12,** 101248. ISSN: 1674-9871. 🔗 https://www.sciencedirect.com/science/article/pii/S1674987121001122 (2021).

**5**   Fernandes, M. C., Oliveira, L. F. B., Colares, I. V. V., Araújo, R. S. & **Lima**, **P.** Comportamento de análises em superfície planimétrica e modelada frente a representações cartográficas e índices geomorfológicos - bacia do Rio Cuiabá - Petrópolis (RJ). *Revista Brasileira de Geomorfologia* **18.** 🔗 https://rbgeomorfologia.org.br/rbg/article/view/1210 (2017).

## Conference Proceedings, including oral, or poster presentations

**1**   **Lima**, **P.**, Steger, S. & Glade, T. *Comparison of non-landslide sampling strategies to counteract inventory-based biases within national-scale statistical landslide susceptibility models* in. **Vol. 19 (EGU2017-13523)** (2017b). 🔗 https://meetingorganizer.copernicus.org/EGU2017/EGU2017-13523.pdf.

**2**   **Lima**, **P.**, Steger, S., Glade, T. & Mergili, M. *Combining landslide susceptibility with potential runout: an integrative approach combining data-driven methods* in. **S06. Geomorphological hazards and risks** (University of Athens, Greece, 2019b). 🔗 http://www.geomorph.org/wp-content/uploads/2020/01/RCG2019_Abstract-book_20200108.pdf.

**3**   Arango Carmona, M. I., **Lima**, **P.**, Mergili, M. & Glade, T. *Mobility and hazard analysis of selected landslides in Lower Austria* in. **Vol. 22 (EGU22-8646)** (2022). 🔗 https://doi.org/10.5194/egusphere-egu22-8646.

**4**   Jiménez Donato, Y. A., **Lima**, **P.**, Arango Carmona, M. I. & Glade, T. *Risk assessment of earth mass movements in Lower Austria. Case study: NoeMOTION Project* in. **ICG2022-616** (University of Coimbra, Portugal, 2022). 🔗 https://doi.org/10.5194/icg2022-616.

**5**   **Lima**, **P.**, Steger, S., Petschko, H., Goetz, J., Schweigl, J., Bertagnoli, M. & Glade, T. *Exploiting newly available landslide data to verify existing landslide susceptibility maps a decade after their implementation* in. **Vol. 22 (EGU22-7351)** (2022). 🔗 https://meetingorganizer.copernicus.org/EGU22/EGU22-7351.html.

**6**   **Lima**, **P.**, Steger, S., Petschko, H., Goetz, J., Schweigl, J., Bertagnoli, M. & Glade, T. *How well do landslide susceptibility maps hold up over time? Reviewing the accuracy of maps implemented for spatial planning in Lower Austria* in. **ICG2022-154** (University of Coimbra, Portugal, 2022). 🔗 https://doi.org/10.5194/icg2022-154.

**7**   **Lima**, **P.**, Steger, S., Glade, T. & Mergili, M. *Enhancing the completeness of statistical landslide susceptibility modeling by integration of release and propagation zones* in. **Vol. 20 (2020-8630)** (2020). 🔗 https://meetingorganizer.copernicus.org/EGU2020/EGU2020-8630.pdf.

**8**   **Lima**, **P.**, Steger, S. & Glade, T. *Evaluation of statistical and machine learning based landslide susceptibility models for very large areas – coping with error prone input data* in. **Vol. 21 (EGU2019-11314)** (2019). 🔗 https://meetingorganizer.copernicus.org/EGU2019/EGU2019-11314.pdf.

**9**   **Lima**, **P.**, Steger, S. & Glade, T. *Landslide susceptibility mapping at national scale for Austria. Scientific challenges within applicable solutions* in (2018).

**10**   **Lima**, **P.**, Steger, S. & Glade, T. *Modelling strategies to cope with limitations of statistical landslide susceptibility models applied for large areas. A national scale study for the Austrian territory* in. **Vol. 20 (EGU2018-9067)** (2018). 🔗 https://meetingorganizer.copernicus.org/EGU2018/EGU2018-9067.pdf.

11. Coelho Netto, A. L., Facadio, A. C., Silva, R. & **Lima**, **P.** *Bioclimatic changes and landslide recurrence in the mountainous region of Rio de Janeiro: are we ready to face the next landslide disaster?* in. **Vol. 19 (EGU2017-17718)** (2017). 🔗 https://meetingorganizer.copernicus.org/EGU2017/EGU2017-17718.pdf.

12. **Lima, P.**, Coelho Netto, A. L. & Fernandes, M. C. *The drainage efficiency index (DEI) as a morphological indicator of landslide spatial occurrence in mountainous catchments. A case of study applied in the mountainous region of Brazilian Southeastern* in. **Vol. 18, EGU2016-7750** (2016). 🔗 https://meetingorganizer.copernicus.org/EGU2016/EGU2016-7750.pdf.

13. **Lima**, **P.**, Coutinho, B. H., Gomes, G. B. & Coelho Netto, A. L. *Topographic Parameters related to translational landslide occurrence and susceptibility mapping at Córrego Dantas, Nova Friburgo, RJ.* in (2015).

14. Borges, G. F., **Lima**, **P.** & Avelar, A. S. *Geomorfologia, solos e movimentos de massa ocorridos em janeiro de 2011 na bacia do Córrego Dantas, Nova Friburgo (RJ)* in. **5** (Universidade Federal do Amazonas, out. 2014), 141–144. 🔗 https://www.periodicos.ufam.edu.br/index.php/revista-geonorte/article/view/1291.

15. Borges, G. F., **Lima**, **P.** & Avelar, A. S. *Geomorfologia, solos e movimentos de massa ocorridos em janeiro de 2011 na bacia do Córrego Dantas, Nova Friburgo (RJ)* in (out. 2014).

16. **Lima**, **P.**, Coutinho, B. H., Gomes, G. B., Fernandes, M. C. & Coelho Netto, A. L. *Parâmetros morfométricos relacionados às bacias de 1º ordem e a ocorrência de deslizamentos rasos na bacia do Córrego Dantas: Nova Friburgo - RJ* in. **5** (Universidade Federal do Amazonas, out. 2014), 218–223. 🔗 https://www.periodicos.ufam.edu.br/index.php/revista-geonorte/article/view/1305.

17. Araujo, I. S., Barbosa, L. S., **Lima**, **P.**, Avelar, A. S. & Rotunno Filho, O. C. *Modelagem Hidrológica das interações de uso urbano e cobertura vegetal na bacia do Rio Cachoeira, Maciço da Tijuca - RJ.* in. **Anais do 9 Sinageo: Geomorfologia de encostas** (2012). 🔗 http://www.sinageo.org.br/2012/trabalhos/2/2-506-633.html.

18. Barbosa, L. S., **Lima**, **P.**, Araújo, I. S., Sato, A. M. & Avelar, A. S. *Carta geomorfológica em base funcional como subsidio a carta de suscetibilidade aos movimentos de massa: estudo de caso no município de Angra dos Reis, RJ.* in (2012).

19. Barbosa, L. S., **Lima**, **P.**, Negreiros, A. B. & Coelho Netto, A. L. *Respostas hidrológicas e produção de sedimentos em uma clareira de deslizamento em ambiente montanhoso florestal, Maciço da Tijuca, Rio de Janeiro, Brasil* in (2012).

20. **Lima**, **P.**, Barbosa, L. S., Negreiros, A. B. & Coelho Netto, A. L. *Impulsos Variáveis de Chuvas e Descarga de Sedimentos em duas Diferentes Bacias no Maciço da Tijuca (Rio de Janeiro, Brasil): influências de clareiras de deslizamentos, estradas pavimentadas e trilhas.* in (2012).

21. Negreiros, A. B., **Lima**, **P.**, Barbosa, L. S. & Coelho Netto, A. L. *Avaliação da Recuperação vegetal e respostas hidro-erosivas em cicatrizes de deslizamentos em área montanhosa de floresta Atlântica, Maciço da Tijuca, RJ.* in. **Anais do 9 Sinageo: Geomorfologia de encostas** (2012). 🔗 http://www.sinageo.org.br/2012/trabalhos/1/1-678-670.html.

22. Negreiros, A. B., **Lima**, **P.**, Barbosa, L. S. & Coelho Netto, A. L. *Recuperation of Atlantic Forest and Hydro-Erosive Responses in Landslides Scars on Steep Slopes, Rio de Janeiro, Brasil* in (2012).

23. Barbosa, L. S., Silva, R. P., **Lima**, **P.** & Coelho Netto, A. C. *Respostas hidrológicas e produção de sedimentos numa clareira de deslizamento em ambiente montanhoso.* in (2011).

24. **Lima**, **P.**, Silva, R. P., Barbosa, L. S. & Coelho Netto, A. C. *Impulsos variáveis de chuvas e descarga de sedimentos em pequenas bacias florestadas no Maciço da Tijuca: influências de clareiras de deslizamentos, estradas pavimentadas e trilhas.* in (2011).

25. Silva, R. P., Barbosa, L. S., **Lima**, **P.** & Coelho Netto, A. C. *Mapeamento de fontes de produção de sedimentos em encostas montanhosas sob Floresta Atlântica: Parque Nacional da Tijuca (PNT), Maciço da Tijuca, Rio de Janeiro* in (2011).

**26** **Lima, P.**, Faria, F. H. C. & Coelho Netto, A. C. *Reabilitação funcional em clareiras de deslizamentos na floresta atlântica e efeitos na produção de sedimentos em períodos chuvosos.* in (2010).

## Books and Chapters

**1** **Lima, P.**, Steger, S., Glade, T., Tilch, N., Schwarz, L. & Kociu, A. en. in *Advancing Culture of Living with Landslides. WLF 2017* (eds Mikos, M., Tiwari, B., Yin, Y. & Sassa, K.) 943–951 (Springer International Publishing, Cham, 2017). ISBN: 978-3-319-53498-5. 🔗 https://link.springer.com/chapter/10.1007/978-3-319-53498-5_107.

**2** Coelho Netto, A. L., Silva, R., Facadio, A. C. & **Lima, P.** in *Willy Lacerda: doutor no saber e na arte de viver.* (eds Silva Nunes, A. L. L., Mahler, C. F., Danziger, F. A. B., de Oliveira e Castro, F. J. C., Lopes, F. R., Aragão, F. T. S., Martins, I. S. M. & Goretti da Motta, L. M.) 235–241 (Outras Letras, 2016).

**3** Coelho Netto, A. L., Avelar, A. D. S., Sato, A. M., Fernandes, M. D. C., Oliveira, R. R., Costa, R. V., Barbosa, L. S., **Lima, P.** & Lacerda, W. A. in *Extreme Rainfall Induced Landslides an International Perspective* (eds Lacerda, W. A., Palmeira, E. M., Coelho Netto, A. L. & Ehrlich, M.) 263–296 (Oficina de Textos, São Paulo, SP. Brazil, 2014). ISBN: 978-85-7975-150-9. 🔗 https://s3-sa-east-1.amazonaws.com/ofitexto.arquivos/sumarios/Extreme-rainfall-induced-landslides_sum.pdf.

**4** Coelho Netto, A. L., Sato, A. M., de Souza Avelar, A., Vianna, L. G. G., Araújo, I. S., Ferreira, D. L. C., **Lima, P.**, Silva, A. P. A. & Silva, R. P. in *Landslide Science and Practice: Volume 6: Risk Assessment, Management and Mitigation* (eds Margottini, C., Canuti, P. & Sassa, K.) 377–384 (Springer Berlin Heidelberg, Berlin, Heidelberg, 2013). ISBN: 978-3-642-31319-6. 🔗 https://doi.org/10.1007/978-3-642-31319-6_51.

## Thesis and monographs

**1** **Lima, P.** *Landslide susceptibility mapping at varied scales: methodological design adaptations to cope with common input data-related challenges* eng. **Doctoral Thesis** (Wien, 2022). 🔗 https://ubdata.univie.ac.at/AC16738442.

**2** **Lima, P.** *O índice de eficiência de drenagem como subsídio á análise espacial de áreas suscetíveis a ocorrência de movimentos de massa.* **Master Thesis**. (Universidade Federal do Rio de Janeiro, 2015). 🔗 http://objdig.ufrj.br/16/teses/831103.pdf.

**3** **Lima, P.** *Eventos extremos de chuva e produção de sedimentos em duas diferentes bacias florestadas no Maciço da Tijuca - RJ: influências de clareiras de deslizamentos, estradas pavimentadas e trilhas na taxa de produção e transporte de sedimentos.* *(Unpublished)* **Monography; Bachelor.** Supervisor: Prof. Dr. Manoel do Couto Fernandes and Ana Luiza Coelho Netto (Universidade Federal Fluminense, 2012).

# Further relevant education

2019 📑 Introduction to Working on the VSC-3 Cluster. (Workload: 8h). Vienna Scientific Cluster Research Center, VSC, Austria.

📑 Linux and First Steps on the VSC-3 Cluster. (Workload: 8h). Vienna Scientific Cluster Research Center, VSC, Austria.

📑 Professional Presentation of Research Results (Winterterm 2018). (Workload: 20h). Universität Wien, UNIVIE, Austria.

📑 International Summer School on Geospatial Data Science Using R. (Workload: 38h). Friedrich-Schiller-Universität Jena, UNI/Jena, Germany.

2018 📑 How to Approach Proposal Writing for Postdoc Funding Applications. (Workload: 20h). Universität Wien, UNIVIE, Austria.

2016 📑 R - Advanced. (Workload: 20h). Universität Wien, UNIVIE, Austria.

📑 Introduction to R. (Workload: 20h). Universität Wien, UNIVIE, Austria.

## Further relevant education (continued)

- Laram School - International school on landslide risk assessment and mitigation. (Workload: 80h). Università degli Studi di Salerno, UniSa, Italy.

## Services to the discipline – Reviewer of scientific publications

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| 2016 | 4th World Landslide Forum |
| 2018-2019 | Environmental Modeling & Assessment |
| 2019 | 5th World Landslide Forum |
| 2021 | Scientific Reports. Nature |
| 2018-2022 | Natural Hazards (NHAZ) |
| 2022 | Geoenvironmental Disasters |

## Grants & awards

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|---|---|
| 2015 - 2019 | Grants: *Conselho Nacional de Desenvolvimento Científico e Tecnológico*, CNPq, Brazil. |
| 2013 - 2015 | Grants: *Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ*, FAPERJ, Brazil. |
| 2010-2011 | Grants: *Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ*, FAPERJ, Brazil. |
| 2014 | Award: BOLSA NOTA 10, *Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ*, FAPERJ, Brazil. |
| 2013 | Award: COBRAE 2013. Best contributions of COBRAE 2013 - Parallel Session (Field Investigations), Brazilian Association of Soil Mechanics. |