Thiago V. M. do Nascimento

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Summary

I am a Doctoral researcher in hydrology at Eawag, with hands-on expertise in developing large-sample hydrology datasets, reproducible geodata workflows, and collaborative scientific tools. Strong programming skills, and deep experience applying GIS to environmental science, and most importantly, I am passionate about open science.

Professional experience

- **Doctoral Researcher:** Eawag/ University of Zurich, Switzerland [Mar 2023 – Present]
  Main developer of CAMELS-CH-Chem, and EStreams, the largest open European hydrology dataset (www.estreams.eawag.ch). Created reproducible workflows in Python and Google Earth Engine for spatial data processing.
- **Research Assistant:** University of Lisbon, Portugal [Oct 2022 – Mar 2023]
  Investigated climate and land-use impacts on water systems in the Iberian Peninsula by using remote sensing and GIS techniques to assess hydrological vulnerability.
- **GIS Intern:** Paraiba Water and Sewage Company, Brazil [Jun 2019 – Apr 2020]
  Updated water supply system maps using GIS and AutoCAD. Collected and processed field data to support infrastructure design.
- **Undergraduate Research Fellow:** Federal University of Paraiba, Brazil [Jul 2018 – Apr 2020]
  Used remote sensing and GIS techniques to evaluate shoreline changes in a coastal area, evaluation of deforested areas and the spatial pattern investigation of meteorological droughts.

Education

- **PhD in Hydrology** (ongoing): University of Zurich / Eawag, Switzerland [Mar 2023 – Present]
  Supervisors: Dr. F. Fenicia (Eawag), Prof. J. Seibert (UZH), Dr. M. Hrachowitz (TU Delft)
- **MSc in Hydro Science and Engineering:** Technische University of Dresden (TU Delft), Germany, graduated with distinction, final grade 1.2 (German scale: 1 = best, 5 = fail), [Sep 2020 – Sep 2022]
- **MSc in Water Resources:** Federal University of Paraiba, Brazil, final grade 9.9 (Brazilian scale: 0–10) [Apr 2020 – Dec 2021]
- **BSc in Civil Engineering:** Federal University of Paraiba, Brazil [Jul 2015 – Apr 2020]

Leadership and Mentoring

- **PhD Committee Member:** Eawag [2023 – Present]
- **Teaching Assistant:** Eawag Summer School in Bayesian Methods for Environmental Modelling [2024, 2025]
- **Teaching Activities:** Supporting teaching duties at University of Zurich [2023 – present]
- **Co-Supervisor:** MSc students hosted at Eawag [2023, 2024]
- **Project Lead:** Development of the EStreams and CAMELS-CH-Chem hydrological datasets [2024-2025]

Technical Skills

- **GIS and Remote Sensing:** QGIS, Google Earth Engine and spatial databases (advanced); ArcGIS (intermediate)
- **Programming:** Python (advanced); R, MATLAB and JavaScript (familiar)
- **Tools and Methods:** Hydrological modelling, Machine Learning, Parallel computing, HPC clusters, and processing of large geospatial datasets (e.g., NetCDF, GeoJSON, GeoTIFF, Shapefile)
- **Languages:** Portuguese (native); English (advanced); Spanish, German and French (intermediate)

List of Publications

1. **do Nascimento, T. V.**, *et al.*: Swiss data quality: augmenting CAMELS-CH with isotopes, water quality, agricultural and atmospheric chemistry data, In review at Nature Scientific Data, EarthArXiv [preprint], https://doi.org/10.31223/X5RF0Q, 2025
2. **do Nascimento, T. V. M.**, et al.: How do geological map details influence geology-streamflow relationships in large-sample hydrology studies? *Hydrology and Earth System Sciences*, EGUsphere [preprint], https://doi.org/10.5194/egusphere-2025-739, 2025
3. Klotz, D., Miersch, P., **do Nascimento, T. V. M.**, et al.: EARLS: A runoff reconstruction dataset for Europe, *Earth System Science Data,* Discussion [preprint], https://doi.org/10.5194/essd-2024-450, 2025.
4. **do Nascimento, T. V. M.**, et al.: EStreams: an integrated dataset and catalogue of streamflow, hydro-climatic and landscape variables for Europe, Nature Scientific Data , 11 (1) , 879, https://doi.org/10.1038/s41597-024-03706-1, 2024
5. Ongmu Bhutia, Mishra, M., Guria, R., Baraj, B., Naik, A.K., Marques da Silva, R., **do Nascimento, T.V.M.**, Santos, C.A.G. Evaluation of large-

scale deforestation susceptibility mapping in the mountainous region of the Himalayas: A case study of the Khangchendzong Biosphere Reserve, India. *Remote Sensing Applications: Society and Environment*, 101285, https://doi.org/10.1016/j.rsase.2024.101285, 2024

6. **do Nascimento, T. V. M.**, et al.: Impacts of large-scale irrigation and climate change on groundwater quality and the hydrological cycle: A case study of the Alqueva irrigation scheme and the Gabros de Beja aquifer system, *Science of the Total Environment*, 907, 168151, https://doi.org/10.1016/j.scitotenv.2023.168151, 2023
7. **do Nascimento, T. V. M.**, *et al*. Monthly Streamflow Modeling Based on Self-Organizing Maps and Satellite-Estimated Rainfall Data. *Water Resources Managenment*, 36, https://doi.org/10.1007/s11269-022-03147-8, 2022
8. Lacerda, L.I.d.A., da Silveira, J.A.R., Santos, C.A.G., Silva, R.M., Silva, A.M., **do Nascimento, T.V.M.**, *et al*. Urban Forest loss using a GIS-based approach and instruments for integrated urban planning: A case study of João Pessoa, Brazil. *Journal of Geographical Sciences*, 31, 1529–1553. https://doi.org/10.1007/s11442-021-1910-4, 2021
9. Santos, C. A. G.; **do Nascimento, T. V. M.**, *et al*.: Analysis of long- and short-term shoreline change dynamics: a study case of João Pessoa city in Brazil, *Science of the Total Environment*, 768, https://doi.org/10.1016/j.scitotenv.2020.144889, 2021
10. Santos, C. A. G., Brasil Neto, R. M., **do Nascimento, T. V. M.**, et al. Geospatial drought severity analysis based on PERSIANN-CDR-estimated rainfall data for Odisha state in India (1983–2018). *Science of the Total Environment*, 737, https://doi.org/10.1016/j.scitotenv.2020.141258, 2020
11. Santos, C. A. G; **do Nascimento, T. V. M.**, *et al*.: Analysis of forest cover changes and trends in the Brazilian semiarid region between 2000 and 2018. *Environmental Earth Sciences,* (79), https://doi.org/10.1007/s12665-020-09158-1, 2020
12. Noureddine, K., Mohammed, A., Santos, C. A. G., Abdelkader, D., Abdelhamid, B., **do Nascimento, T. V. M.**: Spatial modeling of soil salinity using multiple linear regression, ordinary kriging and artificial neural network methods in the lower Cheliff plain, Algeria. Journal of Urban and Environmental Engineering, 13 (1), https://doi.org/10.4090/juee.2009.v13n1.034041, 2019

Awards

- **Erasmus Mundus Scholarship (GroundwatCH):** Full funding for MSc in Hydro Science and Engineering (2020–2022)

References

- Dr. Fabrizio Fenicia: Eawag, Switzerland. PhD supervisor. Contact information: fabrizio.fenicia@eawag.ch / +41 58 765 5440
- Prof. Jan Seibert: University of Zurich, Switzerland. PhD co-supervisor. Contact information: jan.seibert@geo.uzh.ch / + 41 44 635 5200
- Dr. Markus Hrachowitz: TU Delft, The Netherlands. PhD co-supervisor. Contact information: m.hrachowitz@tudelft.nl / +31 015 27 86503