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PhD Candidate, Guest Researcher

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Education and Professional Career

2017-2022 BSc. in Mechanical Engineering at Federal University of Juiz de Fora, Juiz de Fora, Brazil.

2022-2024 MSc. in Computational Modeling at Federal University of Juiz de Fora, Juiz de Fora, Brazil.

2022-2023 Researcher, "Modelagem matemática e computacional de injeção de espuma" (PI: Prof. D.Sc. Grigori Chapiro). Financed by Shell Brasil Petróleo LTDA.

Since 2023 Researcher in the project "Avanço na modelagem matemática e computacional" (PI: Prof. D.Sc. Grigori Chapiro). Financed by Shell Brasil Petróleo LTDA.

Since 2024 PhD in Computational Modeling at Federal University of Juiz de Fora, Juiz de Fora, Brazil.

Since 2026 Guest Researcher at Delft University of Technology, Delft, The Netherlands.

Commitment, Appointments and Scientific Volunteer Jobs

Since 2025 Member of the Porous Media Tea Time Talks team of InterPore Young Academy

Since 2026 Membership in InterPore society

Professional Awards, Offers and Recognitions

2026 Best Student Poster Award at InterPore 2026

Most important Publications

- [1] Santos, B. O., dos Santos, R. W., Igreja, I., Chapiro, G., & Rocha, B. M. Impacts of permeability heterogeneities on foam flow in porous media: Uncertainty quantification and sensitivity analysis. *Gas Science and Engineering*, 142, 205710, 2025.
- [2] Nogueira, L. S., de Carvalho, M. A., Santos, B. O., Yonaba, R., Bamal, A., Uddin, M. G., Bodini, M., Goliatt, L. A comparative study of ensemble and non-ensemble machine learning methods for predicting river pollution index. *Ecological Informatics*, 103617, 2026.
- [3] Santos, B. O., Guedes, R. M., da Silva Barra, L. P., Marcomini, R. F., dos Santos, R. W., & Rocha, B. M. Forward Uncertainty Quantification and Sensitivity Analysis of the Holzapfel-Ogden Model for the Left Ventricular Passive Mechanics. *International Conference on Computational Science*, 749-761, 2022.
- [4] Santos, B. O., Igreja, I., Chapiro, G., dos Santos, R. W. & Rocha, B. M. Quantificação de incertezas de escoamentos em meios porosos utilizando injeção de espuma através da expansão de Karhunen-Loève. XXVII Encontro Nacional de Modelagem Computacional, 2024.
- [5] Santos, B. O., Igreja, I., de Paula, F. F., Chapiro, G., dos Santos, R. W. & Rocha, B. M. Análise de sensibilidade de escoamento bifásico com espuma para recuperação avançada de petróleo. XXVI Encontro Nacional de Modelagem Computacional, 2023.