OTACILIO BEZERRA LEITE NETO

Doctoral Researcher

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EXPERIENCE

Doctoral Researcher

Aalto University, School of Science

📅 Nov 2021 – Ongoing   📍 Espoo, Finland

- Working on optimal control and equilibrium-seeking algorithms in the context of large-scale systems at the Process Systems Engineering group
- Teaching Assistant for the course "CHEM-E7225 Advanced Process Control" (2022, 2023, 2024, 2025)

Undergraduate Researcher (Intern)

Federal University of Ceará, Insight Data Science Lab

📅 Feb 2018 – Jan 2019   📍 Fortaleza, Brazil

- Worked on ontological modelling, integration, and semantic compression of large-scale heterogeneous databases.

PROJECTS

Control4Reuse

Water JPI Call "Process Control Technologies for Water Reuse"

📅 Aug 2019 – Nov 2022   📍 International

- Researcher on the Work-Package 2 (Optimal Control and Estimation)

SERVICES AND OTHER ACTIVITIES

Peer-review of scientific publications

- Journal of Process Control   📅 2023 – present
- Internat. Symp. on Math. Theory of Net. and Sys.   📅 2024
- IFAC World Congress   📅 2021, 2023
- American Control Conference   📅 2023
- IFAC Symp. on Dyn. and Ctrl. of Proc. Sys.   📅 2022
- IFAC Symp. on Advanced Ctrl. of Chem. Proc.   📅 2021

Organizing committees

- Nordic Process Control Workshop   📅 2025

Problem Setter for the "Ceará Informatics Olympics" (OCI)

📅 2016 – 2019

ABOUT ME

I am passionate about mathematics and its application to engineering, physics, and computer science. My research focus on combining optimal control and game theory to online decision-making problems in large-scale networked systems. The goal is to design novel algorithmic solutions together with high-performance software/hardware to support their implementation.

EDUCATION

D.Sc. in Chemical Engineering

Aalto University (FI)

📅 Nov 2021 – present

Topic: Optimal control and equilibrium seeking for large-scale (bio)chemical systems

M.Sc. in Teleinformatics Engineering

Federal University of Ceará (BR)

📅 Aug 2019 – Aug 2021

B.Eng. in Computer Engineering

Federal University of Ceará (BR)

📅 Feb 2016 – Jul 2019

SKILLS

Python   Julia   C/C++   Linux   Git

Optimal control & estimation   Game theory

Machine learning   Numerical analysis

LANGUAGES

Portuguese (Native)   ●●●●●

English   ●●●●●

Spanish   ●●●○○

SELECTED PUBLICATIONS

Visit my **Google Scholar** for a complete list.

📄 Journal Articles

- **O. Neto**, M. Mulas, I. Harjunkoski, and F. Corona, "Receding-horizon control of wastewater treatment plants as self-sufficient water resource recovery facilities," *Working draft*, 2025.

- **O. Neto**, M. Mulas, and F. Corona, "A system level approach to generalised feedback Nash equilibrium seeking in partially-observed games," *Submitted to the IEEE Transactions on Control of Networked Systems*, 2025.

- **O. Neto**, M. Mulas, and F. Corona, "SLS-BRD: A system-level approach to seeking generalised feedback Nash equilibria," *IEEE Transactions on Automatic Control (in press)*, 2025.

- **O. Neto**, M. Mulas, and F. Corona, "A model-based framework for controlling activated sludge plants," *Chemical Engineering Journal*, 2024.

- **O. Neto**, M. Mulas, and F. Corona, "About the classical and structural controllability and observability of a common class of activated sludge plants," *Journal of Process Control*, 2022.

👥 Conference Proceedings

- J. A. Magalhães, **O. Neto**, and F. Corona, "Block particle filters for state estimation of stochastic reaction-diffusion systems," in *Proc of the 22nd IFAC World Congress*, 2023.

- **O. Neto**, M. Mulas, and F. Corona, "Online optimal estimation and control for a common class of activated sludge plants," in *Proc. of the 13th DYCOPS*, 2022.

- **O. Neto**, A. Haddon, F. Aichouche, J. Harmand, M. Mulas, and F. Corona, "Predictive control of activated sludge plants to supply nitrogen for optimal crop growth," in *Proc. of the 11th ADCHEM*, 2021.

- **O. Neto**, M. Mulas, and F. Corona, "On the observability of activated sludge plants," presented at the Proc. of the 21th IFAC World Congress, 2020.

- **O. Neto**, M. Mulas, and F. Corona, "On the controllability of activated sludge plants," presented at the Proc. of the 2020 European Control Conf. 2020.

REFEREES

Available upon request