

# OTACILIO BEZERRA LEITE NETO

## Doctoral Researcher

@otacilio.bneto@pm.me

tiominho.github.io

0000-0001-5558-1242

tiominho

tiominho



## ABOUT ME

I am passionate about using applied mathematics to solve real-world engineering problems. My research lies in the intersection of **control**, **optimization**, and **game theory**, with applications to online decision-making problems in multi-agent cyber-physical systems (*e.g.*, utility grids and supply chains). My goal is to develop algorithmic solutions to improve the efficiency and robustness of such systems, and also to understand their (closed-loop) dynamical properties.

## EXPERIENCE

### University Lecturer

#### Aalto University, School of Chemical Engineering

📅 (projected) Jan 2026 – Mar 2026 🇫🇮 Espoo, Finland

- Responsible for graduate course “CHEM-E7225 Advanced Process Control”

### Teaching Assistant

#### Aalto University, School of Chemical Engineering

📅 Jan 2022 – Oct 2025 🇫🇮 Espoo, Finland

- Course “CHEM-E7225 Advanced Process Control” (2022 – 2025)
- Course “CHEM-E7190 Process Dynamics and Control” (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 🇸🇪 Sweden + 🇧🇷 Brazil + 🇫🇷 France

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

## SERVICES AND OTHER ACTIVITIES

### Peer-review for scientific publications

- IEEE Control Systems Letters 📅 2025 – present
- Journal of Process Control 📅 2023 – present

### Peer-review for scientific events

- Int. Symp. on Math. Theory of Networks and Systems 📅 2024
- American Control Conference 📅 2023
- IFAC World Congress 📅 2021 – 2023
- IFAC Symp. on Dynamics and Control of Process Systems 📅 2022
- IFAC Symp. on Advanced Control of Chemical Processes 📅 2021

### Organizing committees

- 25th Nordic Process Control Workshop (NPCW) 📅 2025
- Ceará Informatics Olympics 📅 2016 – 2019

## EDUCATION

### D.Sc.(Tech.) in Chemical Engineering

#### Aalto University

📅 Nov 2021 – Dec 2025 🇫🇮 Finland

**Thesis:** Advances to predictive control and feedback equilibrium seeking with applications to autonomous water resource recovery

**Supervisor(s):** Prof. Francesco Corona

Prof. Iiro Harjunkoski

**Opponent:** Prof. Lorenz T. Biegler (CMU/USA)

### M.Sc. in Teleinformatics Engineering

#### Federal University of Ceará

📅 Aug 2019 – Aug 2021 🇧🇷 Brazil

**Thesis:** Optimal control and estimation of activated sludge plants

### B.Eng. in Computer Engineering

#### Federal University of Ceará

📅 Feb 2016 – Jul 2019 🇧🇷 Brazil

## SKILLS

Automatic control Convex optimization  
Game theory Operator theory  
Numerical methods Machine learning

Python Julia C/C++ Linux Git

## LANGUAGES

Portuguese (Native) ● ● ● ● ●

English ● ● ● ● ●

Spanish ● ● ● ● ●

## PUBLICATION LIST

---

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

### Journal Articles

- J. A. Magalhães, **O. Neto**, I. Harjunoski, and F. Corona, “Local particle flow filters for large-scale dynamic systems,” *Under review*, 2025.
- **O. Neto**, M. Mulas, I. Harjunoski, and F. Corona, “Receding-horizon control of wastewater treatment plants as self-sufficient water resource recovery facilities,” *arXiv preprint*, 2025.
- **O. Neto**, M. Mulas, and F. Corona, “A system level approach to generalized feedback Nash equilibrium seeking in partially-observed games,” *arXiv preprint*, 2025.
- **O. Neto**, M. Mulas, and F. Corona, “SLS-BRD: A system-level approach to seeking generalized feedback Nash equilibria,” *IEEE Transactions on Automatic Control*, 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 *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 *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 *11th ADCHEM*, 2021.
- **O. Neto**, M. Mulas, and F. Corona, “On the observability of activated sludge plants,” in *21th IFAC World Congress*, 2020.
- **O. Neto**, M. Mulas, and F. Corona, “On the controllability of activated sludge plants,” in *2020 ECC*, 2020.

## REFEREES

---




### **Francesco Corona**

Docent (information and computer science)

-  Aalto University
  -  Espoo, Finland
  -  franciscu.corona@gmail.com
- 




### **Iiro Harjunoski**

Professor (process systems engineering)

-  Aalto University
  -  Espoo, Finland
  -  iiro.harjunoski@aalto.fi
- 

### **Michela Mulas**

Professor (teleinformatics engineering)

-  Federal University of Ceará
-  Fortaleza, Brazil
-  michela.mulas@ufc.br