Beatriz Dantas

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Education

West Virginia University — Morgantown, WV, USA
Ph.D. Student, Chemical Engineering; — *Aug 2022 – May 2027 (Expected, flexible)*

Federal University of Campina Grande — Campina Grande, Paraiba, Brazil
B.Sc., Chemical Engineering; — *Apr 2017 – Apr 2022*

Research Experience

West Virginia University — Morgantown, WV, USA
Graduate Research Assistant (Ph.D.) — *Aug 2020 – Currently*

- Proton Exchange Membrane Water Electrolysis (PEMWE) system assessment via flexibility and operability analysis.
- Modeling and simulation of Ex-situ Carbon Mineralization using Coal Fly Ash and the Recovery of Rare Earth Elements.

Federal University of Campina Grande — Campina Grande, Paraiba, Brazil
undergraduate Research (M.Sc.) — *Sep 2017 – Mar 2020*

- M.Sc. thesis: "Metamodel-based Numerical Techniques for Self-Optimizing Control": Developed a methodology capable of using Gaussian Process Regression (GPR) to aid the optimal selection of controlled variables (CVs) in industrial processes, following the Self-Optimizing Control (SOC) methodology.

Work Experience

Columbia University — New York, NY, USA
Visiting Scholar (Ph.D.) — *Jul. 2023 – Currently*

- Tutored undergraduate students at the senior level, allowing them to be introduced to scientific research in process systems engineering, process modeling (steady-state/dynamics), process operability concepts and control.
- Collaborated with Dr. Fernando V. Lima as his Teaching Assistant for the Chemical Process Control course, undergraduate senior-level. Prepared lectures, tutorials in MATLAB/Simulink and problem sets for students, in a problem-based learning fashion.

Federal University of Campina Grande — Campina Grande, Paraiba, Brazil
Graduate Research Assistant (M.Sc.) and Developer — *Sep 2017 – Mar 2020*

- Research and development of BRPWC for PETROBRAS: An automated software capable of easily selecting the most promising self-optimizing control structures in industrial processes.
- Worked on developing the calculation engine in Python for BRPWC, based on the research results from my Master's thesis.
- Conceptualized the user interface for BRPWC, generating mock-ups that were sent to the computer science team to develop the front-end interface.

Accenture — Campina Grande, Paraiba, Brazil
MES MOM and Automation Associate (Full-Time) — *Dec 2021 – Jun 2022*

- Application of the PI System™ and Aspen InfoPlus.21® software to collect, store, view, analyze, and share operational data with users.
- Understand and refine processes, working with clients to simplify, standardize and automate work and business processes found in manufacturing.

Accenture — Campina Grande, Paraiba, Brazil
MES MOM and Automation New Associate (Part-Time) — *Nov 2020 – Nov 2021*

- Application of the PI System™ and Aspen InfoPlus.21® software to collect, store, view, analyze, and share operational data with users.
- Understand and refine processes, working with clients to simplify, standardize and automate work and business processes found in manufacturing.

Skills

Programming: Python, MATLAB, CSharp, Visual Basic for Applications(VBA), Markdown, LaTeX and exposure to R

Technologies/Platforms: Git, GitHub, Simulink

Process simulation: Aspen Plus, AVEVA Process Simulation, Ansys CFX

Languages: English and Portuguese

Relevant Coursework

Major coursework: Transport Phenomena, Advanced Chemical Engineering Thermodynamics, Chemical Reaction Engineering, Mathematical Methods in Chemical Engineering, Statistical Methods, Oil and Gas Refining, Teaching Practicum

Minor coursework: Dynamic Simulations, Linear Control Systems, Advanced Optimization