Guilherme Pedrosa

Education

2020-2021 **Project Management Specialization**, *Faculdade Getúlio Vargas*, São Paulo-Brazil.

2014–2017 **Master of Mechanical Engineering**, *Universidade Federal de Pernambuco*, Recife-Brazil.

2008–2013 **Bachelor of Mechanical Engineering**, *Universidade Federal de Pernambuco*, Recife-Brazil.

2012–2012 **Exchange Student**, *Bucknell University*, Lewisburg-USA.
Awarded the Science Without Borders Scholarship

Master thesis

title *Wind Turbine Performance Fault Detection and Diagnosis*

supervisors Alexandre Costa and Pedro Rosas

description Designed an automated wind turbine performance fault detection and diagnosis system aiming to exploit SCADA data. Uni and multivariable models were employed to estimate power and detect production faults. If detected, these faults were subjected to an innovative fault diagnosis method based on the mutual information.

Experience

Vocational

2018– **Engineering Consultant**, *Votorantim Energia*, São Paulo-Brazil.

- Responsible for the definition of strategy and tools for monitoring the performance and condition of wind turbine fleet (SCADA/CMS)
- Support to O&M team with analyses supporting decision making related to power-ups, equipment/supplier changes, and parameter/configuration changes in wind turbine controllers
- Energetic evaluation of wind farms based on operational data (SCADA)
- Support to development of new renewable energy projects (wind/solar)
- Implantation of automatic met mast data quality monitoring system
- Data analysis: R/Python

2014-2018 **Project Engineer**, *Eólica Tecnologia*, Recife-Brazil.

- Responsible for the development of a wind turbine generator performance monitoring system.
- Data analysis: Matlab/R/Python.
- Prepared monthly technical reports with condition of over 100 individual wind turbine generators sent operation & maintenance (O&M) responsible and higher management.
- Migrated data previously stored in Excel spreadsheets to a SQL based database.
- Automated data extraction from heterogeneous sources (e.g. e-mail containing maintenance information and FTP servers) and database update.
- Created a dashboard with ODBC connection to display key performance indicators using Excel and VBA.

2013–2014 **Intern**, *Eólica Tecnologia*, Recife-Brazil.

- Responsible for the creation of temperature analysis module of the performance monitoring system
- Selected important features based on domain knowledge
- Implemented algorithm to estimate temperature of critical components based on relevant features

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Academia

2012 **Undergraduate Research**, *Bucknell University*, Lewisburg-USA.
- Investigated the effect of flow induced vibration on Tainter gates stability through dynamic simulations in Simulink.

2011 **Undergraduate Research**, *Universidade Federal de Pernambuco*, Recife-Brazil.
- In charge of parallelization of the particle swarm optimization algorithm developed in Matlab for oil reservoir simulation.

2009 **Teacher Assistant**, *Universidade Federal de Pernambuco*, Recife-Brazil.
- T.A. for introductory programming class in the basic STEM curriculum. Duties involved preparing reviews for exams holding Q.A. classes and aiding students with laboratory assignments.

Publications

[1] Gustavo de Novaes Pires Leite, Guilherme Tenório Maciel da Cunha, et al. "Alternative fault detection and diagnostic using information theory quantifiers based on vibration time-waveforms from condition monitoring systems: Application to operational wind turbines". In: *Renewable Energy* 164 (2021), pp. 1183–1194. ISSN: 0960-1481. DOI: https://doi.org/10.1016/j.renene.2020.10.129. URL: https://www.sciencedirect.com/science/article/pii/S0960148120317018.

[2] G. Pedrosa and R. Bispo. "PO074: Reference wind speed for performance monitoring of wind farms: an operational energy assessment point-of-view". In: *Wind Europe Technology Workshop*. Brussels, Belgium, June 2022.

Languages

Portuguese **Fluent**

English **Advanced** *CAE/TOEFL Certificates*

French **Basic**

Computer skills

Advanced Matlab, Microsoft Excel/Word/Powerpoint

Intermediate R, Python, SQL, LaTeX

Basic VBA,Git, html, Simulink

Self Learning

2020 **KLS**.
- Creative relearning

2015 **Coursera**.
- Getting and Cleaning Data
- Exploratory Data Analysis
- Reproductible Research
- The Data Scientist's Toolbox
- R Programming

Interests

- Piano, reading, rock climbing, watercolor

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