Curriculum vitae

PERSONAL INFORMATION

Vanderlei Aparecido da Silva

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Lattes http://lattes.cnpq.br/3333705887357167

Date of birth January 19, 1973 | Nationality Brazilian

JOB APPLIED FOR

Power System Consultant - Siemens

EDUCATION

2018–2022

PhD - Thesis Title: “Energy Management Modeling for Multiple Micro-grids in Active Distribution Systems”

PhD in Electrical Engineering - Power Systems

Federal University of Paraná - UFPR, Curitiba - Brazil

Thesis link at UFPR (pdf): https://acervodigital.ufpr.br/handle/1884/77512

2020–2020

Professional Improvement Course: Data Science Bootcamp

(Remote: 148 class hours)

Instituto de Gestão e Tecnologia da Informação - IGTI, Belo Horizonte/MG

2010–2012

Specialized in Power System Protection: “Curso de Especialização em Proteção do Sistema Elétrico - CEPSE”

(360 class hours) - Power Systems

Federal University of Itajubá - UNIFEI, Itajubá - Brazil

Course webpage link: http://qmap.unifei.edu.br/cepse

2002–2004

Master of Science: “Modelagem Computacional de Canais de Comunicação Móvel”

M.Sc. in Electrical Engineering - Telecommunication

University of São Paulo - USP, São Paulo - Brazil

Dissertation link at USP (pdf): https://www.teses.usp.br/teses/disponiveis

1997–2002

B.Sc. in Electrical Engineering

Londrina State University - UEL, Londrina - Brazil

WORK EXPERIENCE

January 2020 – Current

R&D researcher - Research and Development Projects R&D ANEEL

Instituto Gnarus (Sul), Curitiba - Brazil

He is acting as an R&D researcher and using tools such as Python, Anafas and LabView

1. Project PD-06491-0531/2019, R&D ANEEL - “Wide Area Control Platform with Data Analytics and Machine Learning for Distributed Control Analysis” - Gnarus Institute, UFPR, and COPEL; Coordinator: Prof. Alexandre Rasi Aoki; Period: 2020/12 - 2022/12. Eng. Vanderlei worked on the study and survey of Copel’s Synchrophasorial Network; in the analysis and proposition of monitoring techniques for Copel’s PMUs (Phasor Measurement Unit) network; in the research and development of database solutions for real-time applications; in the development of a monitoring solution in LabView; in the analysis and development of a tool for visualizing the behavior of the Synchrophasorial Network; in the development of a communication module in IEEE c37.118 protocol for synchronized phasor measurement in LabView.
2. Project PD-06491-0563/2019, R&D ANEEL - “Artificial Intelligence Based on Cognitive Automation and Similarity Matching Applied in Electrical Studies of Transmission and Generation for Efficient Works Management” - Gnarus Institute, UFPR, and COPEL; Coordinator: PhD Milton Pires Ramos; Period: 2022/01 - Current. Eng. Vanderlei has worked in the study and modeling of the Electrical Studies (EE) process required by ANEEL and based on the ONS Guidelines for the Elaboration of Basic Projects for Transmission Enterprises; in the evaluation of tools and systems available at Copel GeT in the context of EE; study of Cepel ANAFAS and ANAREDE tools, in addition to ATP; development of solutions in Python language to automate the task of obtaining an equivalent circuit in ANAFAS from the complete national interconnected system for EE purposes of new transmission projects.
3. Project PD-0286-0511/2019, R&D ANEEL - “Daily Scheduling of Microgrids and Active Distribution Network Considering Demand-Side Management” - UFPR and COPEL; Coordinator: Prof. Alexandre Rasi Aoki; Period: 2020/06 - 2022/05. Eng. Vanderlei participated in the idealization, development, dimensioning, and implementation of an energy microgrid project for installation in Parque Barigui, Curitiba - Brazil, containing a three-phase system of 28 kWh batteries, 32 kWh solar panels, vehicular charger, and automatic islanding capacity by software; he also participated in technical negotiations with other research teams hired in the project, such as the THI Team (Germany) and the PTI Team (Foz do Iguaçu).

2021, July and 2022, August

Invited Professor of Artificial Neural Networks - ANN

Gnarus Insitute - Remote

Professor of Artificial Neural Networks (ANN) in the subject Special Topics in Industry 4.0 of the Master in Intelligent Energy course - 8 class hours in 2021 and 8 class hours in 2022. The ANN topic taught by Eng. Vanderlei covered items such the historical evolution of ANNs; mathematical modeling of ANNs; application examples in classification, pattern recognition, function fitting, and multimodal machine learning; stages of design and use of the ANN; a project example with Matlab language. Note: in an equivalent class at UFPR (3 classes in the Applied Artificial Intelligence course for postgraduate students) in 2022, the project example (pattern recognition) was in Python language.

2007, September – 2019, August

Engineer of Automation, Operation, Protection and Control

Companhia Paranaense de Energia – Copel (Power System Utility), Curitiba - Brazil

Main activities: automation of substations and power system operation center; development and maintenance of SCADA and EMS systems; software development for self-healing in distribution networks; Linux and SCADA instructor; adjustment of relays for power transformers in 138kV substations; implementation of automatic substation recomposition software; technical specification of a new DMS/SCADA system for Copel.

2005, January – 2007, August

Associate Professor - Electrical and Computation Engineering courses

Faculdades Associadas de São Paulo - FASP, São Paulo/SP

Main disciplines taught: Theory and Laboratory of Digital Signal Processing I and II; Theory and Laboratory of Fundamental Electronics; Applied Electronics; Digital Circuits I and II; Laboratory of Differential and Integral Calculus I, II and III with Matlab; Introduction to Digital Communications; Laboratory of Electrical Circuits I.

PERSONAL SKILLS

Academic Skills

- Power Flow: during his Ph.D., he worked with the OpenDSS software for unbalanced three-phase power flow in distribution networks.
- Power Systems: he has an extensive academic and practical experience with power system elements (both system and equipment) and with the systems involved in the operation of the power system such as EMS and SCADA;
- Good Didactic Capacity for explaining engineering subjects given the experience as a teacher and the knowledge acquired as a professional throughout his career.
- Ability as a Speaker: in 2020, he conducted two lectures on the Challenges of Microgrids in the Integration of Renewable Energy in the engineering week of the Federal University of Ceará - UFC; in 2014, he presented a lecture at Brazil Automation 2014 (São Paulo) on Applications of Automation Systems in Medium Voltage Networks.
- Good engineering knowledge: during his graduate period, he took 15 master's and doctoral courses, which provided him with a strong knowledge of the academic skills of engineering.
- Motivation for Scientific Research: he has interest and motivation for applied projects of scientific research and development.

Computer Skills

- Python: intermediate-advanced level with knowledge in object-oriented modeling. Tools: Pycharm, Anaconda, JupterLab.
- Machine Learning: experience with Neural Networks in Python and Matlab;
- Software Development: Python experience with modeling and development of the game 2048 including graphical interface (in 2020), and currently with the automation activity of ANAFAS; experience with development of SCADA systems in C language at Copel; experience with the development of a self-healing tool in LUA language at Copel; experience with MATLAB development in doctoral and master's degrees.
- Linux systems: experience with Slackware and RedHat Linux systems;
- Labview: experience with development in Labview
- Other: Script Linux (advanced), Latex(advanced), Java (beginner), Power BI (beginner).

Commuication Skills

- Teamwork: I have worked on several projects involving multidisciplinary teams, such as in the case of ANEEL R&Ds and in the projects I was involved in at COPEL.
- Verbal and written communication: I believe I have excellent verbal and written communication skills. My experience as a teacher contributed to the improvement of these skills. My doctoral thesis and master's dissertation are good examples of writing ability. Regarding verbal communication, I have already presented some papers at conferences, the last one being in December 2022 at the XVII EDAO in São Paulo; in addition, I made several presentations to the internal team and clients during the course of the ANEEL R&Ds that I participated in.

RELEVANT ADDITIONAL INFORMATION

Publications

- ORCID, https://orcid.org/0000-0001-8253-1179

GitHub Public Projects

- 2020 - Game2048 https://github.com/vander-silva/Game2048
- 2022 - ANN Lectures https://github.com/vander-silva/ann-2022

For more details see

- Lattes: http://lattes.cnpq.br/3333705887357167