M.Sc Nestor D. **Pereira Neto**

ELECTRONIC ENGINEER · 38

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"Graduated in Electronic Engineering (2013) and specializing in Biomedical Engineering (2019). My professional journey includes practical experience in the maintenance of diagnostic imaging hospital equipment, along with a stint in teaching technical and higher education courses since 2011. Recently, I earned a Master's in Electrical Engineering with a focus on computing and robotics (2022), propelling me into the realm of research and development in robotics since 2019. My expertise spans hardware description, digital signal processing, C/C++ programming, embedded systems, and mobile robotics."

Education

Federal University of Bahia - UFBA
Salvador, BA

DOCTORATE DEGREE IN ELECTRICAL ENGINEERING - RESEARCH LINE: MACHINE LEARNING AND DIGITAL SIGNAL PROCESSING
Fev. 2023 - Mar. 2027

- Development triggered event algorithm based on FPGA for the ATLAS experiment at the Large Hadron Collider (LHC-CERN).

MASTER'S DEGREE IN ELECTRICAL ENGINEERING - RESEARCH LINE: COMPUTING AND ROBOTICS
Apr. 2018 - Dec. 2022

- Communication between *Robot Operating System - ROS* and *System-on-a-chip - SoC* with integrated FPGA.

Estácio de Sá University
Salvador, BA

SPECIALIZATION IN BIOMEDICAL ENGINEERING
Oct. 2017 - Feb. 2019

- Convolutional Neural Network for Detection of QRS Complexes in Electrocardiogram Signals

Faculty of Science and Technology - ÁREA1
Salvador, BA

BACHELOR'S DEGREE IN ELECTRONIC ENGINEERING
Feb. 2008 - Jul. 2013

- Command prototype to fit X-ray equipment to the standards required by the National Health Surveillance Agency - ANVISA.

Professional Experiences

SENAI - CIMATEC
Salvador, BA

SPECIALIST II - ROBOTIC ENGINEERING
Apr. 2022 - currently

- Development robotics solutions using the ROS2 with expertise in Gazebo Simulation, ROS2 control, SLAM and URDF/Xacro.
- Software and firmware development using C/C++ and python, to ensure integration and functionality of robotic systems.
- Collaborating closely with cross-functional teams guiding trainees and fellows.

CONSULTANT II - ROBOTIC ENGINEERING
Apr. 2019 - Apr. 2022

- Development robotics solutions using the ROS2 with expertise in Gazebo Simulation, ROS2 control, SLAM and URDF/Xacro.
- Software and firmware development using C/C++ and python, to ensure integration and functionality of robotic systems.

PROFESSOR PART TIME - 20H
Nov. 2018 - Apr. 2019

- Teach class for the course: Industrial Mechatronics. Subjects: Analog Electronics and Digital Eletronic.

ÁREA1|Wyden College
Salvador, BA

LABORATORY TECHNICIAN
Jul. 2013 - Aug. 2017

- Prepare and teach practical classes for the courses: Computer Engineering, Electrical Engineering and Automation Engineering.
- Test new tools used in laboratories and provide training, extension courses

Alfamed Eletromedicina
Salvador, BA

ENGINEER - TECHNICAL RESPONSIBLE
Aug. 2013 - Feb. 2015

- Technical responsible for the company.
- Electronic maintenance in hospital bio-imaging equipment.

Centro Territorial de Educação Profissional da Região Metropolitana CETEP-RM
Camaçari, BA

TEACHER - 40H
jun. 2011 - jun. 2013

- Teach classes in the following subjects: Analog and digital electronics; Microcontrollers; Electric circuits.
- Guide students in their course completion work.

Micro Comércio e Serviço Ltda.
Salvador, BA

MAINTENANCE TECHNICIAN
Jun. 2009 - Sep. 2010

- Preventive and corrective maintenance in hospital bioimaging equipment.

INTERN - MAINTENANCE
Mar. 2008 - Jun. 2009

- Preventive and corrective maintenance in hospital bioimaging equipment.

Languages

Portuguese Native.

English B1 level - CEFR.

Courses

2021	**FPGA INTEL Training(20h)**, Macnica DHW - Official Training Center FPGA INTEL	*Florianópolis, SC*
2018	**NucLi - English. listening comprehension (32h)**, Federal University of Bahia - UFBA	*Salvador, BA*
2018	**Programa Idiomas sem Fronteiras: My English Online - Level 4 (120h)** , Ministry of Education - MEC.	*Brasil*
2010	**Study of Device Control via parallel, serial and USB ports (60h)**, Faculdade ÁREA1.	*Salvador, BA*
2010	**Applied Analog Electronics (30h)**, Faculdade ÁREA1.	*Salvador, BA*

Projects and Research

SENAI CIMATEC *Salvador, BA*

FLATFISH - SIPEM *Oct. 2023 - Dec. 2023*

- Mobile underwater robotics development project.
- Development in C/C++ language.
- Tools: Gitlab, Docker, Robotic Framework, Fast DDS.

SUBOT - CTG BRASIL (CHINA THREE GORGES CORPORATION) *Oct. 2021 - Sep. 2023*

- Mobile robotics development project for inspection of high voltage substations.
- Development in C/C++; firmware for peripheral communication; Electrical design.
- Tools: GitHub, ROS2, Gazebo, Mbed, SolidWorks Electrical.

DIGISUB - PETROBRAS *Apr. 2019 - Oct. 2021*

- 3D digitizer development project of underwater surfaces in deep water.
- Development in C/C++; firmware for peripheral communication; Electrical design.
- Tools: GitHub, ROS1, Gazebo, PCL, KiCad.

Polytechnic School of the Federal University of Bahia - UFBA *Salvador, BA*

MASTER'S PROJECT *Dec. 2018 - Dec. 2022*

- 1 GigE communication development between FPGA and ROS.
- Development in C/C++ language; Hardware project in verilog for SOC/FPGA; Paper presented at *IBERCHIP 2022*.
- Tools: Quartus, GitHub, C/C++ Socket, Cyclone V - Intel, Network protocols.

Faculty of Science and Technology - ÁREA1 *Salvador, BA*

UNDERGRADUATE RESEARCH SCHOLARSHIP *Jul. 2011 - Jul. 2013*

- Development of a microcontrolled command to fit old X-ray equipment to current technical standards established by ANVISA.
- Programming 8 bits microcontrollers; Electronic project; Hardware prototipe; Publication in *Cientefico ISSN 1677-1591, jul/dez 2013*.
- Tools: 8051, KiCad, Assembly programming language.

Skills and Abilities

Basic Verilog HDL, Cyclone V, Sockets, Cmake, GDB, Nios II, Embedded Linux, SimuLink.

Intermediate Python, 3D CAD, Quartus Prime, RTOS, OOP, Linux, Git/Github, PIC, AutoCAD, ROS/Gazebo.

Advanced PCB/KiCad, Matlab, C/C++, AVR, 8051, ARM Cortex M, GNU-Make, LaTeX.

Presentation

28th IBERCHIP Workshop *Santiago, Chile*

IEEE CIRCUITS AND SYSTEMS SOCIETY IN LATIN AMERIACA *1-4 Mar. 2022*

- Communication between Robot Operating System - ROS and SoC with integred FPGA

Honors & Awards

2022	**PETROBRAS**, Prêmio Inventor 2022 - Award for filing a patent for an underwater 3D scanner	*Rio de Janeiro, Brasil*