

# M.Sc Nestor D. Pereira Neto

ELECTRONIC ENGINEER · 38

Address: Rua Eduardo Campos nº 10, Boca do Rio, Salvador - BA, Brazil, 41705-230

☎ (71) 9 9698-6755 | ✉ nestor-dp@hotmail.com | 🌐 lattex.cnpq.br/8490310764316084 | 🌐 nestorpneto | 🌐 NestorDP

*“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: COMPUTING AND ROBOTICS

Feb. 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.
- Undergraduate research scholarship for two years

## 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.

- Preventive and corrective maintenance in hospital bioimaging equipment.

## Languages

**Portuguese** Native.  
**English** B1 level - CEFR.

## Courses

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

## 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.

## Honors & Awards

2022	<b>PETROBRAS</b> , Prêmio Inventor 2022 - Award for filing a patent for an underwater 3D scanner	Rio de Janeiro, Brasil
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## Presentation

### 28th IBERCHIP Workshop

Santiago, Chile

#### IEEE CIRCUITS AND SYSTEMS SOCIETY IN LATIN AMERICA

1-4 Mar. 2022

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