

# 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

*"I have a degree in Electronic Engineering (2013) and a specialization in Biomedical Engineering (2019). I have experience in the maintenance of diagnostic imaging hospital equipment. In 2011, I started to work as a teacher in technical and higher education courses. I am Master in Electrical Engineering in the computing and robotics area, at the Federal University of Bahia (2022). Since 2019 I have had the pleasure of working with research and development in the field of robotics. Main areas of interest: Hardware description, Digital Signal Processing, C/C++ Programming; Embedded systems and Mobile robotics localization and navigation."*

## 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

- ROS2 robotics framework: Gazebo Simulation, URDF/Xacro, SLAM Techniques for UGV.
- Programming C/C++ and python.
- Hardware and software integration.
- Hardware and firmware development for embedded systems.

CONSULTANT II - ROBOTIC ENGINEERING

Apr. 2019 - Apr. 2022

- ROS robotics framework: Gazebo Simulation, URDF/Xacro.
- Programming C/C++ and python.
- Hardware and software integration.
- Hardware and firmware development for embedded 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.
- Provide extension courses and the experience program.

### 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.

### MAINTENANCE TECHNICIAN

- Preventive and corrective maintenance in hospital bioimaging equipment.

Salvador, BA  
Jun. 2009 - Sep. 2010

### INTERN - MAINTENANCE

- Preventive and corrective maintenance in hospital bioimaging equipment.

Mar. 2008 - Jun. 2009

## 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

#### FLATFISH - SIPEM

- Mobile underwater robotics development project.
- Development in C/C++ language.
- Tools: Gitlab, Docker, Hyro.

Salvador, BA  
Oct. 2023 - currently

#### SuBot - CTG BRASIL (CHINA THREE GORGES CORPORATION)

- Mobile robotics development project for inspection of high voltage substations.
- Development of ROS nodes in C/C++ and Python language.
- Hardware and firmware development for actuator systems and peripheral communication.
- Electronic and mechanical project development.

Oct. 2021 - Sep. 2023

#### DIGISUB - PETROBRAS

- 3D digitizer development project of underwater surfaces in deep water.
- Development of ROS nodes in C/C++ and Python language.
- Hardware and firmware development for actuator systems and peripheral communication.
- Prototype power system sizing: sources, AC-DC/DC-DC converters, batteries.

Apr. 2019 - Oct. 2021

### Polytechnic School of the Federal University of Bahia - UFBA

#### MASTER'S PROJECT

- 1 GigE communication development between FPGA and ROS.
- Hardware project in verilog for implementation in SOC/FPGA (Cyclone V - Intel).
- Socket programming in C/C++ language for linux.
- Development of ROS nodes in C/C++ language.
- Paper presented at [IBERCHIP 2022](#).

Salvador, BA  
Dec. 2018 - Dec. 2022

### Faculty of Science and Technology - ÁREA1

#### UNDERGRADUATE RESEARCH SCHOLARSHIP

- Development of a microcontrolled command to fit old X-ray equipment to current technical standards.
- Programming 8051 family microcontrollers in assembly language.
- Research of the technical standards established by ANVISA in relation to X-ray equipment.
- Presentation of monthly reports with activities developed in the period.
- Publication of the results in an article in the journal [Cientefico ISSN 1677-1591, jul/dez 2013](#).

Salvador, BA  
Jul. 2011 - Jul. 2013

## 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

## Presentation

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### 28th IBERCHIP Workshop

IEEE CIRCUITS AND SYSTEMS SOCIETY IN LATIN AMERICA

*Santiago, Chile*

*1-4 Mar. 2022*

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