

### HARD SKILLS

Python	7+ yrs
Linux	5+ yrs
Open Source Tools	5+ yrs
Git	4+ yrs
ROS	3+ yrs
AWS	1+ yrs
C++	1+ yrs

## CONTACT

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# **NIKOLAY PRIETO**

Python Developer

### **PROFILE**

Ph.D. with strong knowledge in design optimization, robotics, and data science. I have got work experience in project management, software development, research, cloud computing and education. I have excellent skills in object-oriented programming, machine learning, data science, Industrial Internet of Things (IIoT), computational robotics, computer vision, maths, embedded systems, statistics, project management, and physical computer modeling. Nowadays, I am looking for a job in the tech industry as a data scientist or computational robotician.

### WORK EXPERIENCE

## Sorry Robots LLC (remote) Python Cloud Developer

Nov 2021 -

Cloud AWS developer in charge of the design of microservices (FaaS) for a third-party logistics (3PL) company. I create the lambda functions in order to process the APIs implied in the process.

#### Technologies include:

- Python for custom tool development.
- · AWS, API gateway, AppSync, S3, CDN, CloudFormation, SAM, Neo4J.

#### Universidad de San Buenaventura Computational Robotics and Al

Jul 2019 - Dec 2021

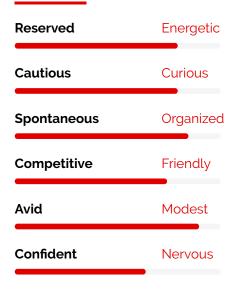
Associate professor of undergraduate and graduate program in the mechatronics department. My research is focused on the development of machines (robots) with Computer Vision and/or Machine Learning integration algorithms.

- Non Linear control of the ankle dynamic joint stiffness predicted via XG-Boost algorithm.
- Development of an autonomous mobile robot for food services.
- Development of a 3D printer with IoT integration.
- Visual Inertial Navigation systems for aereal and ground autonomous vehicles.

#### Technologies include:

- · Python for custom tool development.
- Pandas, Scikit-learn, OpenCV, ROS, Gazebo, jupyter, Google Colab, keras, tensorflow, Pytorch, CAD, Ansys.

### PERSONALITY TRAITS



### **EDUCATION**

#### 2014 - 2021

## Ph.D in Mechatronics Engineering.

Universidad Nacional de Colombia

A complete characterization of the ankle Dynamic Joint Stiffness through the data analysis of human gait datasets available in the literature was performed at different instances. A predictor with ML algorithms of the ankle DJS based on the anthropomorphic human features was proposed. A dynamic computational framework for obtaining the best ankle-foot passive prosthesis was developed with FEM tools and optimized through Bayesian techniques.

#### 2011 - 2014

## M.Sc. in Mechatronics Engineering

Universidad Militar Nueva Granada

I developed an ankle-foot prosthesis for Colombian runners with optimal combination of carbon-fiber laminates.

#### 2004 - 2009

#### **B.E. in Mechatronics.**

Universidad de San Buenaventura

#### Achievements include:

- Two (2) Industrial Prototypes.
- One (1) Back-end application.

#### Universidad Nacional de Colombia

Aug 14 - Aug 19

#### **Engineering Design researcher**

Doctoral researcher focused on the analysis of the ankle dynamics – via big data scrapping – and design of ankle-foot prostheses using advanced design methods as surrogate models and transient simulations of solid materials.

- An ankle dynamic joint stiffness profile predictor from anthropomorphic measurements with ensemble algorithms.
- An optimal ankle-foot prosthesis shape generator according to their age, race and gait speed using Bayesian optimization.

#### Technologies include:

- · Python for custom tool development.
- · ANSYS, LS-DYNA, Linux environment.
- Use of IU servers to enhance the process performance.
- QD, pandas, scikit-learn, scikit-posthoc, scikit-fda, VTK, scipy, researchpy, google colab, tensorflow, keras.
- · Git for configuration and documentation versioning.

#### Achievements include:

- · Best GPA 2015-I during doctoral studies.
- Full scholarship from MINCIENCIAS for PhD studies.
- Two (2) back-end open source applications to be used by the research community.

## Indiana University Purdue University Indianapolis. Research Assistant

Jun 18 - Dec 18

I performed activities including the following:

- Design and construction of a catheter holder for medical applications through additive manufacturing and injection plastic processes.
- Physically testing of the medical devices at different configurations.
- Attend lectures in relevant topics such as topology optimization.

#### Technologies include:

- · Linux and Python for custom Tool development.
- · LS-DYNA, BayesOpt, scikit-optimize.

### **CERTIFICATES**

## Algorithms and data structures Specialization

#### Coursera

1/4 courses

Algorithmic techniques for solving various computational problems

## Reinforcement Learning Specialization

#### Coursera

1/4 courses

Skills to implement a complete RL solution and understand how to apply AI tools to solve real-world problems.

#### **Deep learning Specialization**

#### Coursera

1/4 courses

A foundational program that will help you understand the capabilities, challenges, and consequences of deep learning.



#### Achievements include:

- One (1) final report of medical design.
- · One (1) Industrial prototype to begin test on users.

#### Military Industry of Colombia.

Feb 09 - Sep 14

#### **Research and Development Project Manager**

Administrative and technical management of projects focused on researchand technological development in the defense field. The duties involved were:

- Management of five (5) research projects. Total investment of two (2) million dollars.
- · Monitoring transfer of the generated know-how to the implied factories.
- Technological assessment, industrial property, engineering design and manufacturing of prototypes.

#### Technologies include:

- · Microsoft Project, Office 365.
- · Inventor, solidworks.
- · Altium Designer, Matlab.

#### Achievements include:

- Two (2) TV operated mobile robot prototypes.
- · A variety of prosthetics for lower and upper limbs.
- Development of command and control systems for the Colombian navy.
- · One (1) military vehicle prototype.
- · Master Scholarship by the Military Industry.