NIKOLAY PRIETO

Software Developer, ML Engineer

HARD SKILLS

Python — 7+ yrs

Linux — 5+ yrs

Open Source Tools — 5+ yrs

Git — 4+ yrs

ROS — 3+ yrs

C++ — 1+ yrs
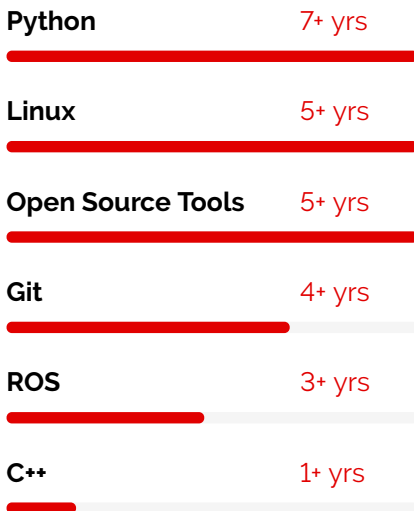
CONTACT

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PROFILE

Ph.D. with strong knowledge in computer science, design optimization, robotics, and data science. I have got work experience in software development, project management, research, and as a professor. 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 and/or research.

WORK EXPERIENCE

Mvnifest — Nov 2021 - NOW
Backend Engineer

Mvnifest is a third-party logistics company re-inventing the way as logistics is being managed. We are creating a mainframe to help with the entire process. I am a Python remote developer in this company.

- To develop Distributed Systems on the cloud for a third party logistics company.

Technologies include:

- Python for custom tool development.
- Neo4J (NoSQL) as main database framework.
- AWS services included: Appsync, S3, EC2, lambda, SES, SQS, SNS, SAM, API gateway, eventbridge.

Achievements include:

- In charge of the design and re-factoring of code modules from monolithic services into distributed systems.
- Authorization and Authentication system.
- Development of microservices either with REST or graphQL interfaces.
- Documentation and infrastructure design on templates.

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

Universidad de San Buenaventura
Computational Robotics and AI

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, CAD.

Achievements include:

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

Universidad Nacional de Colombia
Engineering Design researcher

Aug 14 - Aug 19

Doctoral researcher focused on the analysis of the ankle dynamics 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.

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.

- 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.

Achievements include:

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

Military Industry of Colombia.
Research and Development Project Manager

`Feb 09 - Sep 14`

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.