MARÍA SOFÍA ÁLVAREZ LÓPEZ

Phone: (+57) 301 776 3724 | **Github**: sofiaalvarezlopez
Email 1: ms.alvarezl@uniandes.edu.co
Email 2: maria.sofia.alvarez.lopez@gmail.com
Address: Cra. 14 #117-15 Apt.401 Bogotá D.C., Colombia
Website: https://sofiaalvarezlopez.github.io/

Education

UNIVERSIDAD DE LOS ANDES – Bogotá, Colombia
BS expected in October 2022
Double degree: Physics Degree + Systems and Computing Engineering Degree
GPA: 4.66/5.0

GIMNASIO FEMENINO – Bogotá, Colombia
International Baccalaureate (IB)
First in the class
Score: 38/45

Experience:

RESEARCH ASSISTANT IMAGINE GROUP – UNIANDES, January 20 – Present

- Undergraduate Research Assistant at Computer Vision and Machine Learning applications for brain images.
- Helping develop and understand best ways to apply feature engineering, feature learning, machine learning and deep learning techniques to brain images.
- Helped testing and improving a web-based app for medicine students to visualize, study and interact with patient tomography images.
- Used Python, TensorFlow, React JS, Orthanc and Osimis.

LATAM TECHNICAL MENTORSHIP PROGRAMME MENTEE– FACEBOOK, September 20 – Present

- Selected, among 500+ applicants in Latin America, as one of 50 mentees to take part of Facebook's Technical Mentorship Program for Latin American CS students.
- Focused on developing coding skills, soft skills, interview prep and Facebook's working culture.

RESEARCH ASSISTANT IMAGINE GROUP– UNIANDES, June 19 – January 20

- Undergraduate Research Assistant at BIM-based mixed reality applications to improve human-decision making during the construction process.
- Helped understand how Eye-Tracking, implemented in several Augmented Reality (AR) technologies (e.g. Magic Leap, HoloLens), may increase danger awareness in construction site workers.
- Published an article in IEEE VR PERCAR 2020 Workshop on how depth cues influence on Eye-Tracking depth measurement in the Magic Leap.
- Used Unity, C# and Python.

RESEARCH ASSISTANT MPTG- CBP– UNIANDES, June 19 – January 20

- Undergraduate Research Assistant at the Max Planck Tandem Group on Computational Biophysics.
- Helped in modeling polymers, similar to the Von Willebrand Factor (VWF), using Brownian Dynamics simulations.
- Used C++, Shell and GROMACS.

TEACHER ASSISTANT – UNIANDES, Aug 14 – Dec 15

- Assisted in several core Computer Science and Physics courses, such as Object-oriented Programming and Algorithmic I and Differential Calculus.

Publications

- Raimbaud, P., Alvarez-Lopez, M.S., Hernandez, J., Figueroa, P. (March, 2020.) **Influence of Depth Cues on Eye-Tracking Depth Measurement using the Magic Leap Device.** 2020 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW). DOI: 10.1109/VRW50115.2020.00045

Independent and Academic Projects:

LIFEGUARD BOOTS– UNIANDES, Academic Project

- Designed intelligent boots and a web-based app for the Colombian army which aims to allow commanders visualize the geolocation of their platoon, monitor their vital signs and ease mine detection.
- Used Arduino, C++ and Angular.
- Second place in "ExpoAndes", the University's Engineering Projects Fair, in the Systems and Computing Engineering category.

HIGH ENERGY PHYSICS SEMINAR– UNIANDES, Independent Project

- Passionate about high energy physics, detectors, muons and Computer Science applications to these field of physics, I've been continuously participating in the High Energy Physics Seminar at my University.
- Have exposed and discussed some articles on GARFIELD++, Monte Carlo simulations, muon imaging techniques and triple GEM detectors.

CHIPER SW ARCHITECTURE– UNIANDES, Academic Project

- Designed the SW architecture for a Colombian startup called Chiper, which aims to ease and cheapen shopkeeper's orders to suppliers, within the SW architecture class.
- Our team was selected, among 70+ students, as one of the best architectures (in design and implementation).
- Used Django (Python), Angular, Express, Mongo DB, PostgreSQL, Amazon Web Services, Auth0 for user authentication, among other technologies.

GIRL UP UNIANDES WEB PAGE– Independent Project.

- Being the founder and president of the first Girl Up Campus Club in Colombia, and with my passion for science and technology and willingness to advocate for women in STEM, I decided to build Girl Up Uniandes' webpage.
- Challenged myself and learned React Typescript in less than 5 days.
- Used React.

CITIMO– Hackamericas 2018, Independent Project.

- In the context of a transport hackathon, our team developed a web-based application to help bicycle riders choose the shortest, and safest, route. It aimed to, eventually, help the bicycle riders choose the safest routes (according to other users' recommendations and government data), in order to prevent bike theft.
- Used JS.

Skills

COMPUTER LANGUAGES AND TECHNOLOGIES: Python, Java, Go, C#, JavaScript, TypeScript, C++, git, React, SQL, HTML.

LANGUAGES: Spanish as native language, Proficient (C2) in English and Basic Knowledge (A1) in German.

Achievements and awards

MODEL UN PARTICIPANT

- Participated in 10 UN Models, including Harvard's Model United Nations (HMUN), developing leadership, speaking and teamwork skills.
- Served as committee president twice.
- Received 2 best delegate acknowledgments and a total of 8 recognitions.

Advocacy, Public Speaking and Soft Skills

IEEE-VR 2020 SPEAKER:

- Despite being virtual, I exposed the article we wrote for the IEEE VR 2020 PERCAR Workshop. (See Publications section).
- Was the only Undergraduate student exposing an article in the PERCAR Workshop.

GIRL UP CAMPUS CLUB FOUNDER AND PRESIDENT– UNIANDES, 2018-Present

- Always willing to advocate for women's voices (specifically in STEM), I founded the first Girl Up Campus Club in Colombia. Girl Up is a United Nations Foundation (UNF) initiative which aims to help adolescent girls in developing countries. We develop activities in favor of Girl Up's objectives (health, education, gender equality and abolition of gender violence) whilst empowering women in our own community, so that every girl and every woman is able to achieve her dreams and her full potential.
- Made part of Girl Up + Disney's global campaign: Dream Big, Princess.

RCMC AND FMC

- I am a student member of the *Red Colombiana de Mujeres Científicas (RCMC)* - Colombian Network of Female Scientists, which is part of the Colombian Academy of Exact, Physical and Natural Sciences. RCMC aims to promote and stimulate the participation of women in STEM, in order to achieve Colombia's economic development.
- I have participated several times in the forum (FOP- *Foro de Orientación Profesional*) made by Mujeres por Colombia for low-income high school female students to motivate them to get into STEM, in order to increase women participation in these fields. I have been a panelist in Physics and Systems and Computing Engineering.

CURRICULUM COMMITTEE

- I am part of the committee stablished to update the Computer Science Curriculum. Along many professors, we have made joint efforts to update the courses to the evolving needs of the industry and the academy.

HOW TO STUDY PHYSICS

- Along 5 other physics students, and accompanied by our University and our professors, we developed a series of videos to help students taking core Physics courses organize themselves and learn techniques to learn Physics in a better and funnier way.

SIN MEDIDA

- I am part of my University's Catholic group. I have also helped with Catechesis and contributed to several community service projects since High School.