María Alejandra Boada Rodriguez

Software Engineering

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I am a professional with a background in psychology and software development, currently pursuing a degree in Software Engineering and a Master's in Cybersecurity and Cyberdefense. I am complementing my academic training with advanced studies in quantum computing, post-quantum cryptography, and applied mathematics. My profile includes active participation in international events and hackathons, and I am currently part of a quantum computing research group with Universidad de los Andes. I have solid foundations in linear algebra, probability, programming, and technologies applied to cybersecurity and quantum information.

EXPERIENCE

Quantum Portfolio Optimization – Own Project — Aug 2025
- Developed a portfolio optimization platform using a QUBO (Quadratic Unconstrained Binary Optimization) formulation to balance risk and return.
- Implemented preselection strategies (Sharpe ratio, high-return, low-volatility & correlation) to reduce problem complexity and improve diversification.
- Built a simulated annealing solver and integrated quantum-inspired methods with the possibility of scaling to QAOA/Pennylane.
- Designed a professional frontend to present results including asset weights, allocation in USD, expected annual return, volatility, and QUBO cost.

Tech Stack: Python, NumPy, Pandas, PennyLane, React, GitHub Pages
Page Link: https://investmen-portafolio.vercel.app/
GitHub Link: MariaAlejandraBoadaRodriguez/investmen-portafolio

Teleportation - Own Project — Feb 2025
- Developed an interactive web platform to simulate quantum teleportation using Flask and Pennylane.
- Designed an intuitive interface to input quantum parameters and visualize the state transmission results.
- Integrated a quantum backend to process teleportation logic based on entanglement and measurement outcomes.

Tech Stack: Python, Flask, Pennylane, HTML, CSS, JavaScript, Render
Page Link: https://teleportation-project.onrender.com/
GitHub Link: https://github.com/MariaAlejandraBoadaRodriguez/teleportation_project

SKILLS

Programming Languages: *Advanced*: Python, Quiskit, Pennylane*; Intermediate:* Java, Cirq, PHP*; Basic:* C#
Frameworks Tools: *Advanced:* React JS*; Intermediate:* Laravel; Basic: Spring Boot, Node JS
Data Base: *Advanced:* MySQL*; Intermediate:* PostgreSQL
Tools: *Advanced:* Visual Studio Code; *Intermediate:* Jira, Postman, Git, Basic: Docker.
Agile: *Advanced:* Scrum*.*
Languages: *Native:* Spanish*; Intermediate:* English (B1) Currently in Pathway 2 at ILAC.

EDUCATION

Universidad Iberoamericana - Virtual, Student Engineering of Software. Jun, 2022 - Present
Escuela Superior de Guerra - on-site, Master 's degree in cybersecurity and cyberdefense. Jun, 2024 – Present
Universidad de los Andes - Virtual, Student Post-Quantum Cryptography Course. Aug, 2024 - Dec 2024
Universidad de los Andes - Virtual, Introduction to Quantum Computing Course. Jun, 2024 - Jun, 2024
SENA - Cali, Colombia. Software Programming Technician. Sep, 2020 - Feb, 2023
Universidad de Antioquia - Virtual, Software Programming Skills for Web Pages. Aug, 2021 - Oct, 2021
Corporación Universitaria Minuto de Dios - On-site, Psychologist. Aug, 2011 - Dec, 2015

CERTIFICATIONS

Variational Algorithm Design - IBM. Aug. 2024
Basics of Quantum Information - IBM. Dec, 2024
Introduction to Cybersecurity - CISCO. Apr, 2023
Basic Python Course - Platzi. Jan, 2023