

Juana Granados Rodríguez

Curriculum Vitae et Studiorum

Personal Information

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Nationality: Spanish, Colombian

Date of Birth: 24/07/2002

Address: Cra 5 No. 26B-57 Bogotá, Colombia.

Education and Training

Universidad de los Andes

Bogotá, Colombia

Bachelor's Degree in Physics (GPA: 4.28/5.00)

2020 - 2024 (expected)

- Expected Graduation: October 2024
- Relevant coursework: Electromagnetism, Quantum Mechanics, Renormalization, Statistical Physics, Computational Methods, Particle Physics.

Minor in Mathematics

- Relevant coursework: Discrete Mathematics, Advanced Linear Algebra, Abstract Algebra, Complex Variable Calculus, Probability.

Projects and Research Experience

Nanomagnetism Group and Seminar

Universidad de los Andes, Bogotá, Colombia

August 2023 - Present

- Collaborated on a project studying the magnetic and electric properties of V_2O_5 nanoparticles under the supervision of a professor Juan Gabriel Ramirez Rojas, PhD.
- Conducted experiments using Vibrating Sample Magnetometry (VSM), X-ray Diffraction (XRD), and Raman Spectroscopy for material characterization.
- Analyzed experimental data and contributed to the interpretation of results in the context of nanomagnetism.
- Presented results during seminar and group meetings.

Quantum Field Theory and Mathematical Physics Seminar

Universidad de los Andes, Bogotá, Colombia

January 2023 - Present

- Contributed to discussions on advanced topics in quantum field theory.
- Wrote an undergraduate thesis applying Epstein-Glaser techniques to explore renormalization processes in quantum field theory.
- Shared advancements in my learning and collaborated with peers and professors to deepen the understanding of quantum field theory concepts.

Experimental Project: Magnetic and Electrical Properties of Cobalt-Doped V_2O_5 Nanoparticles

Universidad de los Andes, Bogotá, Colombia

September 2023 - December 2023

- Synthesized and characterized cobalt-doped V_2O_5 nanoparticles, focusing on their magnetic and electrical properties using advanced analysis techniques like VSM and XRD.

Undergraduate Thesis: The Wavefront Set and its Applications in Quantum Field Theory

Universidad de los Andes, Bogotá, Colombia

January 2024 - August 2024

- Analyzed the mathematical structure of wavefront sets in quantum field theory and applied Epstein-Glaser techniques to explore renormalization processes in theoretical physics.

Work Experience

Teaching Assistant - Honors Integral Calculus and Differential Equations

Universidad de los Andes, Bogotá, Colombia

August 2021 - December 2021

- Graded assignments and exams, assisted the professor in virtual classes and the development of class materials and evaluations, addressed students' questions online, and managed the course page and resources.

Teaching Assistant - Vector Calculus

Universidad de los Andes, Bogotá, Colombia

June 2023 - August 2023

- Graded assignments and exams, held regular office hours to guide students through challenging concepts, and provided academic support to ensure their understanding and progress.

Skills and Interests

Programming and Technical Tools: Python (NumPy, SciPy, Matplotlib, Pandas), LaTeX, Git, GitHub, Jupyter Notebooks

Data Analysis and Tools: Computational modeling, data visualization, statistical analysis, Python for data analysis, experience with VSM, XRD, and Raman spectroscopy

Experimental Skills: Familiar with laboratory protocols, vibrating Sample Magnetometry (VSM), X-ray Diffraction (XRD), Raman Spectroscopy, and nanoparticle synthesis techniques.

Languages: Spanish (Native), English (IELTS Academic 7.5 band score)

Personal Attributes: Communication of complex scientific concepts, strong analytical skills, effective teamwork in academic research settings, adaptability to new technologies for data analysis and research in physics.

Other Interests: Passionate about playing guitar, piano, bass, and singing from a young age, I was part of my school band, performing traditional Colombian and Latin American popular rhythms. As an art history enthusiast, I have taken multiple courses classical and modern art movements, with a focus on Colombia, during my undergraduate courses.