



Sheyla Leyva Sánchez

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WORK EXPERIENCE

🏢 **Universidad Politécnica de Madrid** – Madrid, Spain

City: Madrid | Country: Spain

Marie Skłodowska-Curie Actions ITN Early Stage Researcher in HARNESS

[09/2025 – Current]

- Conducting multidisciplinary research at the intersection of law, ethics, and AI, analysing the socio-technical impacts of data-intensive systems and the implementation of EU data and AI regulations.
- Collaborating with partners across the HARNESS network to develop methodologies and tools that support regulatory compliance, ethical governance, and risk mitigation in emerging AI ecosystems.

🏢 **TWGroup** – Viña del Mar (Remote), Chile

City: Viña del Mar (Remote) | Country: Chile

Software developer

[05/2024 – 09/2024]

- Development of web applications: feature implementation, bug fixing, and maintenance of legacy code.
- Training in mobile app development with Flutter.
- **Technologies:** PHP, Laravel, Backpack for Laravel, PostgreSQL, Flutter, Dart, Blade, Vue.js, REST APIs.

🏢 **Technological University of Havana (CUJAE)** – Havana, Cuba

City: Havana | Country: Cuba | Website: <https://cujae.edu.cu/>

University teaching assistant

[01/2024 – 07/2024]

- Teaching of an introductory C programming course for first-year students, covering programming fundamentals, algorithms, and problem-solving.
- Design and delivery of an elective Python course from basics to data manipulation and analysis using Pandas, NumPy, and Matplotlib. ([GitHub](#))
- **Technologies/Subjects taught:** C, Python, Algorithms, Data Analysis, Pandas, NumPy, Matplotlib

🏢 **Pronotez LLC** – Georgia (Remote), United States

City: Georgia (Remote) | Country: United States

Software developer

[08/2023 – 04/2024]

- Design and management of backend infrastructure and databases for mental health document automation.
- Integration of LLM technology via ChatGPT API to streamline document generation.
- Implementation of prompt flow engineering to enhance performance and usability.
- Deployment to production environments using Docker.
- **Technologies:** Python, FastAPI, PostgreSQL, LLM, Prompt Engineering, Docker, REST APIs, Linux Servers.

EDUCATION AND TRAINING

Master's in Data Science

Polytechnic University of Madrid [09/2024 – 07/2025]

City: Madrid | Country: Spain | Website: <https://www.upm.es/> | Level in EQF: EQF level 7

- Data acquisition, cleaning, transformation, and integration from multiple sources
- Applied statistics and mathematical foundations for data science
- Supervised and unsupervised learning, deep learning, and neural networks
- Big data processing and distributed computing (e.g., Spark, Hadoop)
- Visual data exploration and insight communication
- Legal, ethical, and privacy considerations in data management and AI
- Research methodology, teamwork, and scientific communication in interdisciplinary environments

Bachelor's Degree in Computer Science

University of Havana [09/2019 – 01/2024]

City: Havana | Country: Cuba | Website: <https://www.uh.cu> | Final grade: 4.5 out of 5. Ranked 8th out of 47. | Level in EQF: EQF level 6 | Thesis: Replication of Strange Attractors using Echo State Networks: Insights from Information Theory.

- Software engineering and programming (object-oriented, functional, procedural)
- Data structures, algorithms, and computational complexity
- Database systems and information management
- Operating systems and computer networks
- Artificial intelligence and machine learning fundamentals
- Mathematical modeling and applied computing
- Research methods and scientific communication
- Teamwork and interdisciplinary project collaboration

LANGUAGE SKILLS

Mother tongue(s): Spanish

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** B2

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Programming Languages

C# / Python (computer programming) / R / TypeScript / PHP / Java (computer programming)

Containers: Docker, Docker Compose / Deployment: Linux Servers

Machine Learning & AI

machine learning / deep learning / Scikit-learn / Large Language Models (LLMs) / Keras/TensorFlow

Django / FastAPI / Flask / Node.js / .NET / React / Backpack for Laravel / Vue.js

Semantic Web & Graph Databases / NoSQL Databases

Communication & Collaboration

cooperate with colleagues / apply technical communication skills / work as a team / delegate responsibilities / lead others

Problem Solving & Critical Thinking

provide technical documentation / think analytically / adapt to change / think proactively / ethical awareness

CONFERENCES AND SEMINARS

[11/2024] Madrid

I Workshop of the Spanish Society for Artificial Intelligence in Biomedicine (IABiomed) Participated in a workshop focused on the real-world applications of artificial intelligence in the biomedical field within the European Union, with a special emphasis on the Spanish healthcare context. Topics discussed included: • AI for diagnosis and disease prevention • Ethics and explainability in AI-driven healthcare technologies

Link: <https://2024.iabiomed.org/>

[05/2024] Havana

II Women Mentoring Networking Workshop dedicated to sharing experiences and fostering connections among women in STEM, with the objectives of building a more inclusive future and creating female role models in science.

[03/2024] Havana

School of Physics and Mathematics Without Frontiers (ZIGZAG) Intensive interdisciplinary program designed to strengthen mathematical and computational foundations for young scientists in Latin America. The training combined theoretical and applied approaches to develop problem-solving skills in physics, mathematics, and programming. Topics covered: • Statistical Physics • Python programming for scientific computing • Topology and its applications • Group Theory fundamentals • Differential Geometry concepts

Organisation providing education and training: ICTP (International Centre for Theoretical Physics) and ICIMAF (Institute of Cybernetics, Mathematics, and Physics)

Link: <https://indico.ictp.it/event/10461/material/5/0.jpg>

PUBLICATIONS

[2023]

Implementation of a Fair Hermite Interpolation Scheme Based on Quadratic A-Spline Elastica This paper presents a Hermite interpolating subdivision scheme based on rational Bézier curves with local tension parameters. It discusses an efficient software implementation for minimizing the energy functional associated with curve fairness. The resulting "fair curve" demonstrates excellent properties for design purposes. A notable aspect of the proposed method is its derivative-free nature. The paper includes a discussion on the implementation and presents numerical results showcasing the effectiveness of the approach.

Authors: Loidel Barrera Rodríguez, Jorge Estrada Sarlabous, Sofía Behar Jequín, Sheyla Leyva Sánchez | **Journal Name:** Revista Investigación Operacional | **Volume, Issue and Pages:** Vol. 44, No. 4, pp. 517–524 | **Publisher:** Universidad de La Habana

Barrera Rodríguez, L., Estrada Sarlabous, J., Behar Jequín, S., & Leyva Sánchez, S. (2023). Implementation of a Fair Hermite Interpolation Scheme Based on Quadratic A-Spline Elastica. Revista Investigación Operacional, 44(4), 517–524.

Link: <https://rev-inv-ope.pantheonsorbonne.fr/sites/default/files/inline-files/44423-04.pdf>