

JOSEFINA DERPICH BLACK

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Data Science • Machine Learning • Pipeline Engineering • Statistical Modeling • Full-Stack Development • Python

SKILLS

Programming Languages	Python (Expert), SQL, JavaScript, HTML5, C++, Bash.
Data & Analytics	Data pipeline development, statistical analysis, time-series analysis, multi-source data integration, automated reporting, data visualization.
Machine Learning	PyTorch – GRU Networks, RNNs, CNNs; model training, validation and deployment.
Libraries & Frameworks	Pandas, NumPy, SciPy, Matplotlib, Astropy, Lenstronomy.
Dev Tools	Git, VS Code, Jupyter Notebooks, L ^A T _E X.
Software Engineering	Full-stack development, backend logic, frontend interfaces, code architecture design.

INDUSTRY EXPERIENCE

Data Analyst & Software Developer May 2026 - Present
DMF Soluciones Informáticas *Santiago, Chile*

- Design and implement data pipelines for processing and integrating structured datasets using Python and SQL.
- Perform data analysis and translate results into clear, actionable outputs for internal stakeholders.
- Develop and maintain full-stack solutions, covering both backend logic and frontend interfaces.
- Design software code architectures to ensure scalability, maintainability, and performance.

TEACHING EXPERIENCE

Teaching Assistant – Programming and Web Development March 2025 - July 2025
Federico Santa María Technical University *Santiago, Chile*

- Mentored students in algorithmic logic, programming fundamentals, and modern web development standards.

Teaching Assistant – Calculus I, II, and III March 2023 - December 2024
Andres Bello National University *Santiago, Chile*

- Supported undergraduate students across four consecutive semesters in differential, integral, and multivariable calculus.

EDUCATION

Astronomy Bachelor August 2020 - December 2025
Andres Bello National University *Santiago, Chile*

- *Thesis:* Testing Neural Network Spectral Decomposition Algorithms for Strongly Lensed Quasars.
Supervisor: Prof. Timo Anguita.
- *Relevant Courseworks:* Cosmological Numerical Simulations, Astrophysics of Gravitational Waves, Astronomy Laboratory II.

Informatics Engineering Bachelor March 2017 - July 2020
Adolfo Ibañez University *Santiago, Chile*

Scholar Student 2003 - 2016
The Grange School *Santiago, Chile*
Cambridge International Curriculum – A-Levels and IGCSE (Mathematics, Sciences, English, French).

WORKSHOPS & CONFERENCES

IV Workshop de Estudiantes de Ciencias Físicas y Astronómicas

August 2025

- Presented a poster on “*Testing Neural Network Spectral Decomposition Algorithms for Strongly Lensed Quasars*”. Organized by CECFA, Universidad de La Serena, Chile.

Rubin Community Workshop

July–August 2025

- Advanced training in large-scale survey data management, science pipelines, and survey strategy. Tucson, AZ.

Academia and Industry: Strategies for a Successful Career

November 2024

- Career workshop hosted by Kim Nilsson and Ole Moeller-Nilsson at UNAB.

Galaxy Chemistry with Numerical Simulations

October 2024

- Hands-on workshop hosted by Prof. Maria Celeste Artale at the Astrophysics Institute of UNAB.

LANGUAGES

Spanish (Native) **English** (Advanced) **French** (Basic)