Andrés **Casillas García de Presno**

mathematician • programmer

Nationalities

US • Mexico

Programming

Python • Julia • Fortran • C++ • HTML • CSS

Tools & Libraries

NumPy • Pandas • SciPy • spaCy • scikit-learn

Frameworks

Jupyter • Git • Linux

Concepts

Numerical Linear Algebra • Machine Learning • Data Analysis • Algorithm Design and Implementation

Languages

Spanish (Native) • English (C2) • German (B1) • French (A2)

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Short Resumé

Award-winning Mexican-American applied mathematician and programmer with a top-ranked academic record (Sotero Prieto Medal, Gabino Barreda Diploma) and strong expertise in numerical algorithms, parallel computing, and machine learning. Proven experience developing fast solvers and mathematical models for scientific and industrial applications (Fraunhofer Institute for Algorithms and Scientific Computing). Passionate about applying advanced mathematics to create real-world solutions in tech.

Education

Nov. 2025 (Expected) **M.Sc. Mathematics**
Bonn University · Bonn, Germany
Focus: Discrete Math, Numerical Analysis, Probability Theory

June 2023 **B.Sc. Mathematics**
UNAM · Mexico City, Mexico
GPA: 4.0 (U.S. grading system)

Experience

Sept. 2025 - Present **Student Research Assistant**
Fraunhofer Institute for Algorithms and Scientific Computing · Bonn, Germany
Developed and optimized numerical solvers for large sparse linear systems, improving runtime and scalability.

2019 - 2023 **Teaching Assistant**
UNAM · Mexico City, Mexico
Linear Algebra I, Higher Algebra I & II, Calculus I - IV.

Honors & Grants

2025 **Sotero Prieto Medal**
Mexican Mathematical Society
Best bachelor's thesis in mathematics nationwide.

2024 **Gabino Barreda Diploma**
UNAM Faculty of Science
Second best class GPA.

2022–2024 **Academic Excellence Scholarship**
UNAM Mathematical Institute (IMATE)

2020–2022 **TELMEX-Telcel Scholarship**

Key Projects

2024-Present **Master's Thesis — Parallel AMG Solver Optimization**
Optimized the solution phase for algebraic multigrid solvers to accelerate solutions of large sparse systems in parallel environments. (Fortran, Python, Linux)

July 2025 **German Learning App**
Built and deployed an interactive web app to help learners master German vocabulary and grammar patterns through examples, syntax highlighting, and practical exercises. (Streamlit, Git, Python)

Feb. 2025 **Lovász Theta Number Calculator**
Designed and implemented a Julia-based tool to approximate the Lovász Theta Number for graphs, combining combinatorics, semidefinite programming, Monte-Carlo methods, and optimization. (Julia, Jupyter)

Publications & Talks

March 2023 **Algorithmic problems in cellular automata (translation)**
UNAM Mathematical Institute (IMATE)

Oct. 2022 **When Pascal met Turing and Wolfram (translation)**
UNAM Mathematical Institute (IMATE)

July 2022 **A. C.-G. de Presno, F. Godínez. Construction of empirical models via stepwise fitting of a fractional Newtonian cooling law. Fractals**