Antonio Aguirre

Santa Cruz, CA | jaguir26@ucsc.edu | +1 (831) 515-9264
github.com/antonioapdl | linkedin.com/in/antonioapdl | antonio.agprz@gmail.com

Summary

Ph.D. candidate in Statistics focused on time series forecasting and uncertainty quantification, with emphasis on model selection, variable selection, and scalable inference (variational Bayes). Industry experience delivering reproducible Python pipelines and experiment workflows using Git and AWS.

Education

Ph.D. in Statistics | University of California, Santa Cruz (UCSC) — **Expected 2026**
Research: Bayesian time series; quantile modeling; model selection; scalable VB inference — GPA: 3.82/4

M.Sc. in Economics | Instituto Tecnológico Autónomo de México (ITAM) — 2018 – 2020

B.Sc. in Applied Mathematics | Instituto Tecnológico Autónomo de México (ITAM) — 2014 – 2018

Industry & Professional Experience

Delos Financial Technologies | San Rafael, CA (Remote) — May 2025 – Sep 2025
Quantitative Researcher (Contract) — *Python, Git, Bash, C++, AWS (EC2/EMR/S3), Stan*

- Built an evaluation notebook suite for goodness-of-fit, residual diagnostics, and cohort-level reporting to standardize model comparison.
- Implemented and validated baseline and extended model variants, refactoring interfaces for consistent parameterization and downstream plotting.
- Automated backtests and experiment runs on AWS using Bash/Python wrappers with versioned outputs, tracked via Git, to improve reproducibility.
- Investigated numerical stability issues (including rounding/quantization effects), documented findings, and proposed mitigation strategies.
- Supported a delinquency forecasting project: data preparation, experiment tracking, and metric dashboards for cross-cohort evaluation.

NeatLeaf Inc. | Scotts Valley, CA — May 2021 – Sep 2022
Data Analyst — *Python, SQL, Git, Bash, Linux, C++, DBeaver*

- Built data pipelines for real-time greenhouse microclimate telemetry and automated storage/processing for downstream analytics.
- Developed spatiotemporal statistical models for air anomaly detection across greenhouses and delivered actionable diagnostics.
- Performed analyses of robot mechanical performance and sensor calibration (BME680, SCD41), improving reliability of collected data.
- Produced weekly technical reports and maintained readable codebases aligned with internal engineering standards.

Banco de México (BANXICO) | Mexico City, Mexico — Aug 2018 – Dec 2019
Data Analyst — *Python, R, SQL, Git*

- Built data pipelines for banknote image datasets used for operational monitoring and model development.
- Developed statistical and ML models for anomaly classification and model diagnostics for deployment readiness.
- Built time series forecasting prototypes for financial volumes and created tools for model selection and performance tracking.

UCSC Statistics Department | Santa Cruz, CA — Feb 2024 – Present
Computer Systems Coordinator — *Linux, Bash, Python/R, Networking, User Support*

- Administer Linux servers supporting faculty and graduate research: upgrades, storage/partitioning, software stacks, and incident resolution.
- Created automation scripts and documentation for onboarding, resource usage, and reproducible compute workflows.
- Coordinated with central IT on infrastructure planning and compliance while serving as the primary technical contact for the department.

Research, Publications & Presentations

Aguirre, A., Lobato, I.N.
Evidence of non-fundamentalness in OECD capital stocks.
Empirical Economics 67, 761–772 (2024).

Aguirre, A., Sansó, B., Prado, R.
A Bayesian Quantile-Based Correction and Synthesis of River Flow Forecasts.
Submitted to *Environmetrics* (Dec 2024).

ISBA World Meeting 2026 (Poster Accepted)
Poster session: late afternoon/evening on one of Jun 29, Jun 30, or Jul 1, 2026 (assigned by mid-March 2026).
Poster title: TBD

Ph.D. Research (UCSC)

- Bayesian time series forecasting with quantile objectives and distributional calibration; forecast correction and synthesis for environmental data.
- Methods: dynamic models, Deep Echo State Networks (DESN), variable/model selection, and scalable variational Bayes inference.

Teaching & Mentoring (Selected)

University of California, Santa Cruz | Santa Cruz, CA — 2021 – Present
Teaching Assistant / Graduate Instructor — *R, Python, Tableau, Gradescope/Canvas*

- Graduate Student Instructor: Data Visualization (STAT 80B), Spring 2025.
- Led discussion sections, designed worksheets/rubrics, and supported instruction across statistics and probability courses.

ASA DataFest | Fresno, CA — Apr 2023
Mentor — *R, Python*

- Mentored teams on modeling and visualization; provided structured feedback on technical work and communication.

Awards, Fellowships & Scholarships

EnviBayes Student Paper Competition (Winner) International Society for Bayesian Analysis (ISBA), 2026
UC Regents Fellowship UCSC Statistics (2021)
UCSC Summer Research Fellowship UCSC Statistics (2024)
TLC Graduate Pedagogy Fellowship (Certificate) Center for Innovations in Teaching and Learning (2023–2024)
Bailleres Fellowship (ITAM B.Sc.) Tuition support (2014–2018)
Bailleres Fellowship (ITAM M.Sc.) Tuition support (2018–2020)
NSF / University of Washington Summer Institute in Statistical Genetics (SISG), 2022
NSF / University of Washington Summer Institute in Statistics and Modeling in Infectious Diseases (SISMID), 2022

Professional Development

Professional Communication Certificate Program (PCCP) UCSC Extension (Fall 2021)
Fundamentals of Causal Inference (with R) ASA/Genentech (Summer 2023)

Skills

Languages: English, Spanish, German
Programming: Python, R, SQL, C/C++, Bash, Git, LaTeX
Methods: Bayesian inference, time series forecasting, quantile modeling, model/variable selection, variational inference, diagnostics & calibration
Tools: AWS (EC2/EMR/S3), Linux, Tableau, Stan