

Hailey Ernest

San Luis Obispo, CA | Hailey.ernest@icloud.com | 425-491-0996 | Portfolio

SUMMARY

Statistics M.S. candidate with hands-on experience in predictive modeling, machine learning, and applied statistical analysis on clinical, aerospace, and public health domains. Proficient in building end-to-end data pipelines from raw data to deployable, interpretable models and visualizations for stakeholders.

WORK EXPERIENCE

Online Biomedical – Data Science Consultant

Bothell, WA | Sept 2024 - Sept 2026

- Engineer reproducible, validated data cleaning and transformation workflows to ensure data integrity for multiple clinical and laboratory datasets.
- Deliver statistical findings in clear visualizations and summaries for non-technical audiences.
- Design automated laboratory inventory and batch-record management workflows for sensitive data.

Online Biomedical – Data Science Intern

Bothell, WA | June - Sept 2024

- Build predictive models and analytical pipelines for R&D and clinical trial data using Python, R, and Excel for clinical lab data supporting pre-surgical infection prevention research.

Cal Poly Statistics Dept. – Instructional Student Assistant

San Luis Obispo, CA | Sept 2025 - Present

- Assist in instruction and grading for statistics coursework within the Bailey College of Science and Mathematics.

PROJECTS

World Health Organization & Kinesiology and Public Health Dept.

August 2026 - Current

- Contributing to a WHO-aligned international consortium (Cal Poly, NCI, Oxford, Monash), evaluating open-source wearable algorithms against physical activity metrics, and using bias, precision, and equivalence analysis for validation.

NASA Ames Research Center - Acoustic Boiling Regime Classification

January 2026 - June 2026

- Built an unsupervised ML pipeline (UMAP + HDBSCAN) to classify cryogenic boiling regimes from 446 acoustic accelerometer runs, achieving 99% clustering stability across parameter changes.
- Engineered 70+ statistical features, applied linear regression detrending per feature, and applied hyperparameter tuning to remove runtime-correlated bias.
- Validated clusters by leave-one-out resampling & designed frozen embedding GMM for real-time classification of incoming data without retraining for reliable early boiling detection in space-based fuel systems.

Global Measles Trends Dashboard & R Package

April 2026 - June 2026

- Built mixed-effects models in R with country-level random effects, applying Bonferroni correction and likelihood ratio tests; developed a custom R package and deployed an interactive Shiny dashboard. Live: [\[link\]](#)

EDUCATION

California Polytechnic State University – M.S. Statistics

San Luis Obispo, CA | June 2027

California Polytechnic State University – B.S. Statistics & Data Science

San Luis Obispo, CA | March 2026

Relevant coursework: *Data Science, Machine Learning, Generalized Linear Models, Survival Analysis, Design & Analysis of Experiments, Probability Theory, Algorithms, Databases, Object-Oriented Programming* | Honors: *Dean's List (Fall 2023, Winter 2024, Fall 2024, Fall 2025, Spring 2026)*

LEADERSHIP

AWS Cloud Club – President/Captain

March 2024 - June 2026

- Led technical workshops on AWS cloud services, helping members build and deploy real-world application prototypes using cloud infrastructure at Cal Poly.

SKILLS & TECHNICAL TOOLS

Languages: Python, R, SQL, Scala, Java, SAS

Statistical Modeling: GLMs/GLMMs, mixed-effects models, survival analysis, hypothesis testing, Bonferroni correction, likelihood ratio tests, ARI, equivalence testing, cross-validation, hyperparameter tuning

Machine Learning: XGBoost, ensemble methods, UMAP, HDBSCAN, Gaussian Mixture Models, clustering & classification, dimensionality reduction, predictive modeling

Tools: Apache Spark, Hadoop, Excel/VBA, Git/GitHub

Visualization: R Shiny, Quarto/R Markdown, ggplot2, Streamlit, gt tables, stakeholder dashboards