

Rachel Roggenkemper

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EDUCATION

California Polytechnic State University, San Luis Obispo

San Luis Obispo, CA

Master of Science in Statistics

Sep 2024 – Jun 2025

- GPA: 3.95 | Thesis: Short Exact Confidence Intervals for the Parameters of the Negative Hypergeometric Distribution
- Awards: Outstanding Graduate Student (College & Department), Community Leadership Award

California Polytechnic State University, San Luis Obispo

San Luis Obispo, CA

Bachelor of Science in Statistics, Data Science Minor

Sep 2020 – Jun 2024

- GPA: 3.85 | Dean's List: 8 quarters | President's Honor List: 2020-2021, 2022-2023 | Mu Sigma Rho: The National Statistics Honorary Society | ASA DataFest 2024 Winner

EXPERIENCE

Data Science Co-op, Catastrophe Analytics (Global Strategic Advisory)

Feb 2023 – Oct 2023

Guy Carpenter

San Francisco, CA

- Developed a reusable data visualization framework in R that automates the integration of event-level losses, metadata, and loss distributions, significantly streamlining the creation of customer-facing hurricane event response reports. This scalable solution improved efficiency and ensured consistency across multiple client reports.
- Enhanced catastrophe model reliability by validating the National Structure Inventory, identifying biases, and ensuring data accuracy across key fields. Built interactive Shiny dashboards for comprehensive RMS/AIR model vendor comparisons, improving internal assessments and model evaluation for the company.

Statistical Consultant, Graduate Consulting Practicum

Apr 2025 – Jun 2025

Statistics Department, Cal Poly

San Luis Obispo, CA

- Collaborated with clients in agriculture, life sciences, and engineering through Cal Poly's graduate consulting practicum. Led client meetings, conducted exploratory and inferential analyses, and delivered interpretable, actionable results and visualizations to support real-world decision-making under faculty supervision.

Data Science Consultant, Capstone Project

Jan 2024 – Jun 2024

Global Emancipation Network

Remote

- Consulted with Global Emancipation Network (GEN) to develop AI-driven models using Meta AI's SAM and OpenAI's CLIP, implementing Zero Shot Instance Segmentation to identify and label objects in trafficking-related images, improving the accuracy and interpretability of location predictions. This work enhances GEN's ability to trace image origins, enabling more effective victim identification and disrupting human trafficking networks worldwide.

Statistical Research Assistant

Apr 2024 – Jun 2025

Statistics Department, Cal Poly

San Luis Obispo, CA

- Developed an algorithm for optimal confidence intervals in the negative hypergeometric distribution with Dr. Bret Holladay, improving precision and ensuring valid coverage beyond existing methods. Created a Shiny app and R package for accessibility while authoring a research paper to advance statistical methodology.

Statistics Grader & Lab Assistant

Jan 2022 – Jun 2025

Statistics Department, Cal Poly

San Luis Obispo, CA

- Graded assignments for 13 different statistics courses, from introductory to advanced theory and computing, ensuring accuracy and consistency across ~1,000 students while providing individualized feedback to reinforce key concepts. Assisted in labs, offering one-on-one and group instruction to support students in statistical computing and problem-solving in R.

Statistical Research Assistant (Frost Scholar)

Jun 2022 – Sep 2022

Statistics Department, Cal Poly

San Luis Obispo, CA

- Collaborated with Dr. Anelise Sabbag to analyze student interactions in online statistics courses, conducting literature reviews, creating visualizations in R, and implementing a framework to evaluate teaching, social, and cognitive presence. Co-authored a peer-reviewed publication.

TECHNICAL SKILLS

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

Statistical Software: JMP, Minitab

Big Data & Distributed Computing: Apache Hadoop, Apache Spark

Tools & Technologies: Git, RStudio, Jupyter, Shiny, LaTeX, Excel, API, JSON

Libraries & Packages: tidyverse, tidymodels, pandas, numpy, scikit-learn, matplotlib

Other Skills: Data Visualization, Statistical Communication, Consulting, Data Modeling, Data Validation