

Seanan William Goodwin Riley

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PROFESSIONAL SUMMARY

Research software engineer with degrees in data science and biology. Builds databases and AI applications for UC Berkeley researchers, working directly with faculty to turn research questions into usable software.

EDUCATION

University of California, Berkeley

May 2026

B.S. in Genetics and Plant Biology (*Focus: Computational Biology and Machine Learning*)

B.A. in Data Science (*Domain Emphasis: Minds, Morals, and Machines*)

EXPERIENCE

UC Berkeley - Psychedelic Facilitation Program, Research Software Engineer, Contractor

2026-Present

- Designed and deployed an authenticated web application for searching program records, analyzing participant feedback, and generating reports through a conversational AI interface.
- Built SQL data models and ingestion pipelines to organize survey responses and curriculum records alongside searchable documents for cross-source analysis.
- Implemented source-cited retrieval and tests for answer quality and data access, so analytical outputs can be checked against the underlying program records.
- Work directly with faculty and program directors to define analytical questions, clarify data limitations, and refine the application for program evaluation and alumni tracking.

UC Berkeley - Echeverri Lab, Sponsored Undergraduate Researcher

2025-2026

- Designed a Python camera-trap pipeline with keyframe selection and background-memory routing to avoid redundant computer-vision inference.
- Compared image-selection and model-routing strategies against a full-inference baseline.
- Reduced SpeciesNet calls by about two-thirds while matching baseline event-level F1 in an offline replay of 6,341 images from 12 held-out camera locations.
- Developed and bench-tested ESP32/FreeRTOS firmware in C/C++ for image and audio capture, collaborating on the camera trap's physical design and sensor integration.

UC Berkeley Center for the Science of Psychedelics, Undergraduate Researcher

2025-2026

- Built and maintained a SQL database of program data, cleaning and organizing tabular records for statistical analysis.
- Answered faculty questions through statistical analyses, visualizations, and reusable summaries for program evaluation.

Vertical Farming at Berkeley, Undergraduate Researcher, TGIF-Funded Project

2023-2025

- Investigated mold resistance in oyster mushrooms through cultivation experiments, RNA extraction, and sequencing library preparation.
- Managed laboratory workflows and the project budget, coordinated undergraduate collaborators, and troubleshooted cultivation and molecular biology protocols.

Cowtown Inc., Founder

2023-2025

- Founded and operated a mushroom and microgreens business, managing production, quality control, purchasing, and sales to local customers.
- Designed and built vertical-farming structures and hydroponic growing systems to support mushroom and microgreen production.

TECHNICAL SKILLS

Languages Python, SQL, JavaScript/TypeScript, C/C++, Rust, R, Java

Data & Analysis PostgreSQL, DuckDB/MotherDuck, SQLite, NumPy, statistical analysis, data visualization

Software Git/GitHub, Unix/Linux, Docker, CI/CD, Node.js, REST APIs

AI & ML PyTorch, computer vision, LLM applications, retrieval systems, agent evaluation