Angela Crabtree, MS

angela.crabtree@biodataworks.com | +1 (208) 596-1751 | Website | LinkedIn | Upwork | GitHub | YouTube

SUMMARY

I'm developing AI-driven tools and workflows for biological research and offering consulting for labs looking to modernize their computational capabilities. With a background as a bench scientist turned bioinformatician, I understand the challenges of bridging experimental work and computational analysis. At BioDataWorks, I help biological researchers streamline their work by building custom AI-powered tools. Whether its finding relevant literature, searching past experimental data, or automating repetitive analysis steps, I design accessible solutions that make research faster, smarter, and more enjoyable.

EXPERIENCE

Freelance Consultant AI & Machine Learning for Life Sciences

BioDataWorks **Jan, 2025 - Present**

Providing short-term consulting and technical implementation for academic labs and biotech startups. Services include AI agents for literature review, RAG-powered lab notebook search, workflow automation, and image-based machine learning analysis.

Bioinformatics Scientist

Earle A. Chiles Research Institute **Apr, 2023 - Present**

Developing machine learning models to make predictions from high-resolution biopsy slide images and genomic sequencing data. Building open-source methods for analyzing highly multiplexed immunofluorescence images to characterize the tumor microenvironment.

Bioinformatics Intern

Earle A. Chiles Research Institute **Apr, 2022 - Apr, 2023**

Developed machine learning models from histopathology images to detect tumor regions and predict breast cancer stage. Created reusable codebases and strategies for ML dataset preparation and preprocessing in the Piening Lab.

Research Technician

University of Idaho **Apr, 2017 - May, 2021**

Studied virus-host interactions in mammalian and yeast models in the Rowley Lab. Managed daily lab operations, including ordering, budgeting, maintaining equipment, and organizing records.

Microbiologist

Washington State University **Feb, 2015 - Mar, 2017**

Worked in the Molecular Diagnostics division of WADDL, extracting genetic material from diverse animal specimens and testing for pathogens using PCR.

Chemist

Anatek Labs, Inc. **Jan, 2014 - Feb, 2015**

Performed coliform testing, ultra-trace mercury (CVAFS), trace metals (ICP-OES), and ammonia/TKN analysis (FIA).

PROJECTS

AI Agents for Scientific Research (view example)

Custom AI agents that accelerate biological discovery from automated literature review and data summarization to workflow guidance. Each agent is tailored to your labs research questions and integrates seamlessly with your existing data sources.

RAG-Powered Knowledge Systems (view example)

Transform scattered lab records and notes into searchable knowledgebases. I build Retrieval-Augmented Generation (RAG) applications that let researchers query lab notebooks and datasets in plain language and receive summarized

insights instantly.

Conversational Assistants for Image Analysis (view example)
Chatbot-style assistants that integrate with image-analysis pipelines to help researchers interpret cell data, check preprocessing steps, and recall prior experiments. Designed to make complex image workflows more transparent and collaborative.

Workflow Automation for Biological Data (view example)
Python-based automation solutions that streamline repetitive analysis and reporting steps freeing your lab from manual data wrangling. Ideal for mIF, image segmentation, and other routine data-processing pipelines.

EDUCATION

Masters Degree, Biology (Bioinformatics & Genomics)
University of Oregon **Jun, 2021 - Dec, 2022**
Knight Campus Graduate Internship Program: Bioinformatics & Genomics track

Bachelor of Science (B.S.), Microbiology
University of Idaho **2012 - 2014**

Bachelor of Science, Chemistry
University of Idaho **2006 - 2011**

SKILLS

Skills: Machine Learning, Image Analysis (H&E, mIF), Bioinformatics, RAG Applications, AI Agents

Stacks: PyTorch, Jupyter Notebooks, QuPath, Azure, Streamlit

Tools: Git & GitHub, VSCode, Docker, Electronic Lab Notebooks, Multiplexed Image Analysis Tools