

Connor Reed

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Professional Experience

- Aquabyte**
Machine Learning Engineer

New York, NY
June 2022 – present

 - Developed, optimized, and deployed custom small-object detector model to detect sea lice on salmon with human-level accuracy, yielding a 75% reduction in the cost of running the product while enabling more effective treatment and regulation
 - Developed, optimized, and deployed model to detect body wounds on salmon
 - Built system to integrate model servers into production pipeline, scaling inferences from tens to hundreds of thousands per day
 - Built internal service to automatically curate important training/evaluation samples from production pipeline for human review
 - Built ML dataset registry and Python library with common computer vision preprocessing and annotation methods to support model reproducibility and fast dataset curation
 - Conduct live and simulation experiments to estimate effects of new models and research proposals on company objectives
 - Serve on company's ESG committee; wrote report for investor on the company's impact, responsibilities, and plans to advance sustainable aquaculture in the wider industry, establishing internal ESG objectives
- Indigo**
Soil Data Research Intern, Carbon Experimentation

Boston, MA
June – August 2021

 - Crafted quantitative framework, analysis, and data visualizations used by the CEO to evaluate risk-reward tradeoffs of key agricultural carbon market opportunities
 - Developed generative Bayesian models to create synthetic soil data combining information from published and proprietary data
 - Created pipeline to automatically clean, map, and interpret soil sample data for customers

Research Experience

- New York University, Department of Environmental Studies**
Graduate Research Assistant, McDermid Lab

New York, NY
July 2020 – September 2022

 - Developed end-to-end deep learning pipeline to detect floods and smallholder croplands in Sentinel-1 and Sentinel-2 satellite image time series over sub-Saharan Africa
 - Conducted geospatial time series analysis using econometric modeling techniques to assess the impact of floods on food security in sub-Saharan Africa from 2009-2020 [1]
- Yale School of the Environment**
Research Assistant, The Bradford Lab

New Haven, CT
January 2016 – August 2020

 - Assisted with field and laboratory data collection for experiments studying the ecological function, formation, and rapid measurement of soil organic carbon
 - Conducted meta-analysis (data collection, statistical analysis) of long-term experiments to quantify the mediating effect of soil organic carbon on the relationship between conservation agriculture practices and crop yield stability

Publications

[1] C. Reed et al., "The impact of flooding on food security across Africa," *Proceedings of the National Academy of Sciences*, vol. 119, no. 43, p. e2119399119, 2022, doi: [10.1073/pnas.2119399119](https://doi.org/10.1073/pnas.2119399119).

Education

- New York University**
Master of Science, Data Science

New York, NY
2020 – 2022
- Yale University**
Bachelor of Science, Environmental Studies *with distinction, cum laude*

New Haven, CT
2015 – 2019

 - Thesis title:* Engaging open-source precision viticulture to manage spatial heterogeneity and improve cover-cropping practice on an organic vineyard ([Abstract](#))

Skills

Programming	Python, R, SQL, Bash
ML Tools	PyTorch(Lightning), scikit-learn, experiment tracking (Hydra, Guild AI, W&B), TensorRT
Databases	PostgreSQL
DevOps	Git, Docker, Terraform, dbt, Airflow, AWS
Statistics	Machine learning, deep learning, computer vision, time series, geospatial, probabilistic models, Bayesian inference, hypothesis testing, A/B testing, structural causal models, generative models
Other	Research, writing, public speaking, food systems, ecology, food security, climate change, music (bass)