

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 quantified uncertainty, yielding a 75% reduction in annotation COGS 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 QA
 - Built ML dataset registry and Python library with common computer vision preprocessing and annotation methods to support model reproducibility and reduce friction to model iteration
 - Conduct experiments to estimate effects of new models and other research proposals on company objectives
 - Wrote report for investors on the company's plans to advance sustainable aquaculture, establishing internal ESG objectives
- Indigo**
Soil Data Research Intern, Carbon Experimentation

Boston, MA
June – August 2021

 - Crafted quantitative framework and visualizations used by the CEO to evaluate risk-reward tradeoff of key agricultural carbon market opportunities
 - Developed generative Bayesian models to create synthetic soil data from published scientific (prior) 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 deep learning pipeline to detect floods on smallholder croplands in sub-Saharan Africa using Sentinel-1 and Sentinel-2 satellite image time series
 - Conducted geospatial time series analysis to assess the impact of floods on crop yields and food security in sub-Saharan Africa
- Yale School of the Environment**
Research Assistant, The Bradford Lab

New Haven, CT
January 2016 – August 2020

 - Assisted with laboratory and field data collection for experiments studying the ecological function, formation, and rapid measurement of soil organic carbon
 - Conducted meta-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

- Reed, C. et al. The impact of flooding on food security across Africa. *Proceedings of the National Academy of Sciences* **119**, e2119399119 (2022)

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 (e.g., Hydra, Guild AI), TensorRT
DevOps	Git, Docker, Terraform, dbt, AWS
Statistics	Machine learning, deep learning, computer vision, time series, geospatial, probabilistic models, Bayesian inference, hypothesis testing, structural causal models, A/B testing, generative models
Other	Scientific research, food systems, ecology, food security, climate change, music (bass)