

# Samuel Hiatt

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## Professional Summary

Experienced software engineer with a passion for applying open source technology to better understand the natural world. Over a decade of experience in team and solo development projects, with a track record of innovation and execution in a variety of software engineering roles requiring both technical skill and creative problem-solving, demonstrating expertise in programming languages and concepts including:

- Python
- JavaScript
- Node.js
- Typescript
- Numpy
- Matplotlib
- Pandas
- TensorFlow / Keras
- Mocha / Chai unit testing
- Machine Learning
- Satellite Remote Sensing
- Geographic Information Systems
- Linux System Administration
- Docker
- RESTful web service development
- Agile Development
- Data Visualization
- Amazon Web Services
- Google Cloud

## Professional Experience

### Freelance Projects

Charlotte, NC | August 2017 - Present

#### Machine Learning Engineer — Avian Vocalizations Species Classifier

- Developed a neural network audio signal classifier to infer bird species from recordings of vocalizations.
- Compiled a training dataset from a selection of crowd-sourced recordings provided by xeno-canto.org, and demonstrated the model's ability to learn and infer species.
- Optimized model performance with hyper parameter tuning and validated performance with cross-validation.

#### Technology Consultant — Hiatt Digital, LLC

- Advised small business digital transformation services, identifying cloud-based strategies to protect clients' on-premises data storage, supporting services backed by Azure, AWS, Google Cloud, and Synology.

#### Web Development Consultant – TDC Systems

- Developed a serverless content management system with automated deployment to Google Cloud Services, cutting costs while mitigating security risks and improving page speed and search engine optimization.

#### IBM / The Weather Channel / Weather Underground

San Francisco, CA | September 2013 – April 2017

#### Senior Software Engineer

- Applied transfer learning to retrain an open source image classification model and infer meteorological conditions from images, providing a novel method for automated validation of current weather conditions.

- Worked on an Agile team of developers and designers to develop real-time map layers and UI components for the Wundermap, a web-based interactive weather map.
- Designed and built internal mapping tools to provide improved visibility into the quality control system supporting a global network of Personal Weather Stations.

## **NASA ARC / Ecological Forecasting Lab / Univ Corp at Monterey Bay**

Moffett Field, CA | July 2007 - August 2013

### **Geospatial Software Engineer / Web Developer**

- Worked with Earth scientists at NASA Ames Research Center on a range of applied science projects, implementing data modeling and analysis pipelines consuming satellite data and generating global insights about ecological processes.
- Designed and developed custom web applications for publishing satellite data products and built mechanisms for efficiently querying large geospatial datasets and generating on-demand visualizations of data trends.
- Worked with project stakeholders ranging from US National Parks land managers to Farmers in the California Central Valley to help them integrate NASA data into their decision making processes.

## **Utah State University GIS Remote Sensing Lab**

Logan, UT | December 2006 - July 2007

### **Software Engineer**

- Implemented data model and near real-time processing pipeline for predicting global land surface phenology (timing of seasons) using remote sensing imagery from NASA satellites. Developed simple web interface for viewing model results.

## **Education**

### **Utah State University, Quinney College of Natural Resources**

Logan, UT | June 2007

### **Bachelor of Science, Geography**

- Computer Science Minor
- Engineering Mathematics Minor
- Geographical Information Science Minor
- Dean's List, College of Natural Resources - 2006, 2007
- Six-month immersive study (geography and computer science) at the University of Costa Rica

## **Udacity**

Online | 2019

### **Machine Learning Engineer Nanodegree**

- Completed several machine learning projects, demonstrating competency in concepts needed to develop, tune, and evaluate artificial neural networks.
- Designed reinforcement learning agents capable of learning solely through interaction with their environment, and demonstrated their ability to learn to control a virtual quadcopter.
- Developed unique data visualizations animating the evolution of a RL agent's neural network as it learns to perform a simple task.

## **Volunteering**

### **Community Legal Services**

East Palo Alto, CA | 2010 – 2013

#### **Interpreter / Translator**

- Spanish language interpreter for client interviews and legal clinics.
- Spanish-English translation of personal declarations and legal documents.

### **Human Rights Center at UC Berkeley**

Berkeley, CA | 2015

#### **Technology Fellow**

- Developed productivity tools to assist investigators at the International Criminal Court.

## **Additional**

- Placed 1st in division at 2022 Motus Off-Road Triathlon, Myrtle Beach, South Carolina.
- Participated in cross-country paragliding competitions in the U.S., Mexico, and South Korea, earning 2017 Rookie of the Year at the Monarca Open in Valle de Bravo, Mexico.
- Built working glider model of seagull from 3D printer, with radio control of flight surfaces.