

## Summary

At my current role I'm responsible for the full life cycle of machine learning. I design, build, and deploy systems for ML pipelines and data infrastructure, and scale models from research to production. This work has led to four published patents relating to deep learning for anomaly detection. I also have experience applying data science and ML to financial, sports, genetic, and infectious disease data. I enjoy building effective software and finding valuable insights through data science.

## Experience

### Machine Learning Engineer

September 2016 - Present

Chiral Software, Los Angeles, CA (Remote via Seattle, WA)

- Lead author on four published deep learning patents relating to real-time anomaly detection.
- Designed, developed, and deployed multi-model deep learning pipelines.
- Built backend server infrastructure to effectively serve multi-model pipelines in real-time.
- implemented the latest cutting-edge research and adapted and improved it for our use cases.
- Built a data processing pipeline to manage millions of data points and generate optimal data sets.
- Created machine learning software for a project that won funding from the US Defense Advanced Research Projects Agency (DARPA).

#### Technologies:

- Convolutional networks, convolutional autoencoders, unsupervised clustering, anomaly detection, Tensorflow, Keras, Pandas, Mongo, SQL, Docker, Darknet, Python, ZMQ, Matplotlib.

### Undergraduate Researcher

September 2015 - July 2016

Hutchinson Machine Learning Research Lab, Western Washington University, Bellingham, WA

- Designed and implemented custom deep and recurrent neural network architectures to model sports data.
- Created a custom LSTM cell state initialization solution to better model individual teams.
- Built a data-processing pipeline that interfaces with a database and normalizes or embeds features appropriately.
- Created custom models with convolutional, LSTM, and deep neural network architectures.
- Wrote code to parse and format datasets into SQL databases.
- Visualized and presented statistical discoveries.

#### Technologies:

- Tensorflow, recurrent neural networks, LSTM networks, SQL, Python, Matplotlib.

### Research Lab Assistant

July 2013 - September 2014

Rose Neuroscience Lab, Western Washington University, Bellingham, WA

- Wrote a program in Java to automate a common microscope imaging task. This reduced task time from around forty minutes to near instantaneous.

## Education

*Bachelor of Science*, Computer Science

Western Washington University, Bellingham, WA, June 2016

## Distinctions

*Outstanding Poster of the Undergraduate Scholars Showcase Poster Competition*

Jake Moorhead, Josh Osborne, Michael Remington, Sam Kaplan and Brian Hutchinson. *Play-By-Play Sports Modeling with Deep and Recurrent Neural Networks*. 2016