

## EDUCATION

**Reed College**, Portland, Oregon

August 2008-May 2011

- B.A., Mathematics, GPA 3.48
- Senior thesis: *The Problem of Zarankiewicz* is a mathematical puzzle concerning the number of shared connections between two groups. I was able to discover and prove a new lower bound for certain cases of the problem.
- Carmine Award 2011 for leadership in the Reed College Rugby program, two institutional scholarships and academic commendation for excellence.

## WORK

## EXPERIENCE

**Intelligent Systems Division, NASA Ames Research Center**, California*Research Engineer II*, **MORi Associates, Inc.**

Sept 2015 to Oct 2016

*Research Engineer I*, **MCT, Inc.**

Feb 2013 to Sept 2015

- I was contracted with the Data Sciences group to tackle the problem of discovering, explaining and predicting safety and operational incidents in aviation through the use of data mining and machine learning techniques.
- We used one-class support vector machines to discover and investigate anomalies during landings at four of the largest US airports. This allowed us to sift through the vast number of unlabeled flights and discuss the most operationally significant with aviation experts. This brought novel safety-related situations to their attention and the results were summarized in series of papers published in IEEE Digital Avionics Systems Conferences.
- I was able to utilize aviation experts' feedback to create a labeled set of flights to validate our anomaly detection algorithms. We used this dataset to baseline an extreme learning machine neural net against state-of-the-art techniques which lead to paper to be presented at the 2016 IEEE World Congress on Computational Intelligence.

**Department of Biomedical Engineering,  
Oregon Health and Science University**, Portland, Oregon*Research Assistant*

July 2011 to June 2012

- Collaborated with Dr. Todd Leen on perturbation methods for statistical analysis of neural modeling.
- By applying these techniques we were able to approximate both online learning algorithms and electric pulses generated by fish which much higher confidence that before, leading to the publication of peer-reviewed journal articles

## TECHNICAL

## SKILLS

- I primarily use the PYTHON scientific stack (NUMPY, SCIPY, SCIKIT-LEARN) in a LINUX environment (REDHAT, RASPBIAN, SHELL SCRIPTS) with GIT and SVN for version control and POSTGRESQL for data storage.

References available upon request.