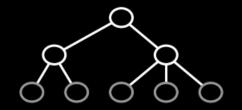
# thomlake

# machinelearning · algorithms · statistics



### education contact

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github.com/thomlake

thomlake.github.io

stackexchange: @alto

programming

2012 - 2015 MS in Computer Science Western Michigan University

Thesis: Analyzing Repetitive Sequences with Structured Dynamic **Bayesian Networks** 

**GPA:** 4.0

onl**ine** 

2009 - 2012 BS Western Michigan University

Major: Computer Science Minor: Mathematics

Senior Project: Semi-supervised sentiment analysis with noisy

labels

GPA: 3.94, Summa Cum Laude

### machine learning

Structured Input & Output Natural Language Processing Neural Networks & Deep Learning Probabilistic Graphical Models

### exp**erience**

2014 - current Atlas Wearables

Austin, TX

Machine Learning Research/Lead Data Scientist

- Developing novel Machine Learning algorithms and Deep Learning architectures for exercise classification, clustering, repetition counting, and form analysis

- Designing One-Shot learning algorithms that allow users to train composable classifiers for custom exercises

- Implementing optimized inference and learning algorithms to run in resource constrained embedded environments

Designing experiments and data collection procedures

- Implementing data storage, annotation, and quality control pipelines

- Designing and implementing various health metrics to provide personalized feedback to users

tools

**JavaScript** 

Python

Julia

Java

C

Numpy/Scipy/Pandas/Sklearn Theano

PT-X

SQL MongoDB 2013 - 2014

Zoetis

Kalamazoo, MI

Data Scientist

- Designed algorithms which used a combination of Machine Learning, Natural Language Processing, and heuristics to standardize semi-structured historical dairy farm records

- Designed and implemented large scale genotype search algorithms by exploiting metric upper/lower bounds to non-metric similarity functions

 Designed algorithms for probabilistic inference of parent genotypes given known offspring genotypes

# vis**ualization**

Matplotlib D3

## projects

Flimsy.jl 2010 - 2013 WMU Risk Avoidance and Mitigation Department Kalamazoo, MI Research Assistant

- Implemented Machine Learning Algorithms for agricultural disease risk prediction

- Improved predictive performance through the use of appropriate loss functions, subsampling, and regularization

- Designed cross-validation procedures for spatiotemporal data

A flexible neural network library github.com/thomlake/Flimsy.jl

### collapsed

Bayesian HMMs and MoHMMs github.com/thomlake/collapsed 2010 Missouri University of Science and Technology Rolla, MO NSF Undergraduate Research

- Wireless Sensor Network development and simulation
- Unsupervised Outlier detection in limited resource distributed computing environments
- Developed a novel dynamic tree based routing scheme

## teaching

Summer 2013 CS 5950 Machine Learning Western Michigan University

First offering. Developed all course materials, assignments, tests, and lectured. This course was based on Murphy's *Machine Learning a Probabilistic Perspective*.

Fall 2012 CS 2100 Python

Western Michigan University

Revamped course. Developed all course materials, assignments, tests, and lectured. Utilized online materials and focused on real world applications.

### honors & awards

2013	Graduate Teaching Excellence Award	Computer Science
2011	Presidential Scholar	Computer Science
2011	Dean's Outstanding Student Award	Computer Science

### patents

### US 2015/0005911 A1

Portable Computing Device and Analyses of Personal Data Captured Therefrom