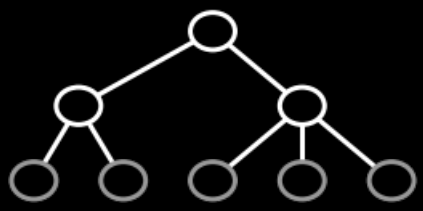
thomlake

machinelearning · **algorithms** · statistics



contact

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269.779.1495

online

github.com/thomlake
stackexchange: @alto
thomlake.github.io

machine learning

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

programming

Python
Julia
C
Java
JavaScript

tools

Numpy/Scipy/Pandas/Sklearn
Theano
LaTeX
SQL
MongoDB

visualization

Matplotlib
D3

projects

Flimsy.jl
Gradient based ML library
github.com/thomlake/Flimsy.jl

collapsed
Bayesian HMMs and MoHMMs
github.com/thomlake/collapsed

education

2012 - 2015 MS in Computer Science — Western Michigan University
Thesis: Analyzing Repetitive Sequences with Structured Dynamic Bayesian Networks
GPA: 4.0

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

experience

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

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

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

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

tea**ching**

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.

hon**ors & awards**

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

pat**ents**

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Portable Computing Device and Analyses of Personal Data Captured Therefrom