



contact

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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
L^AT_EX
SQL
MongoDB

visualization

Matplotlib
D3

projects

Flimsy.jl
A flexible neural network 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 <i>NSF Undergraduate Research</i> – Wireless Sensor Network development and simulation – Unsupervised Outlier detection in limited resource distributed computing environments – Developed a novel dynamic tree based routing scheme	Rolla, MO
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teaching

Summer 2013	CS 5950 Machine Learning First offering. Developed all course materials, assignments, tests, and lectured. This course was based on Murphy's <i>Machine Learning a Probabilistic Perspective</i> .	Western Michigan University
Fall 2012	CS 2100 Python Revamped course. Developed all course materials, assignments, tests, and lectured. Utilized online materials and focused on real world applications.	Western Michigan University

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