COLIN SWANEY

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Summary

Highly motivated quantitative researcher with a strong background in machine learning and finance. Excellent communication and project management skills. Keen to engage in teamwork and tackle new challenges.

Education

PhD Finance University of Iowa / Iowa City IA / 2012 - 2018
MS Mathematics University of Iowa / Iowa City IA / 2009 - 2011
BS Mathematics and Economics (Dual) Kansas State University / Manhattan KS / 2005 - 2009

Experience

Quantitative Researcher Jacobs Levy Equity Management / Florham Park NJ / July 2018 - July 2019

- Implemented, tested, and optimized Julia code to automate the firm's equity research process
- Built a customized web dashboard in Javascript to visualize, share, and explore research insights
- Applied deep learning to generate state-of-the-art stock predictions based on fundamental and market data
- Initiated weekly stand-up meetings and organized machine learning seminars

Visiting Assistant Professor University of Mississippi / Oxford MS / August 2017 - May 2018
Decision Science Intern Conversant Media / Chicago IL / May 2016 - August 2016

- Designed complex SQL queries to extract real-time bidding data from Greenplum database
- Developed statistical models to understand the effects of key parameters in real-time bidding campaigns

Technical Skills

Quantitative	Programming	Certifications	Coursework
Machine Learning	Python, Julia, Matlab, R,	Udacity AWS Cloud	Big Data Analytics (A)
Bayesian Statistics	TensorFlow, Flux,	Developer Nanodegree	Computational Intelligence (A+)
Deep Learning	Javascript, HTML, CSS,	(in progress)	Computational Statistics (A)
Reinforcement Learning	HPC, UNIX/Linux, Git,		Numerical Analysis (B+)
Econometrics	SQL		Numerical Optimization (A-)

Research

"Order Book Events on a Poisson Network," Code Paper

- Leveraged methods from neurological signal processing to establish a generative model of order book events
- Implemented high-dimensional Bayesian inference in Python to test the prediction model on real-world data
- Exploited Cython to achieve a 50x speed-up of the algorithm, significantly increasing the scope of the analysis

"Price Formation and the Shape of the Limit Order Book," Code Paper

- Built a Python package to reconstruct limit order books from raw NASDAQ-ITCH message data
- Utilized a high-performance computing cluster to build a unique, multiple terabyte database
- Developed a low-dimensional model that predicts price movements at up to one-minute intervals

"Evaluating Fund Manager Skill: a Mixture Model Approach" (accepted at *R* Finance 2016) Paper

- Combined machine learning with traditional factor models to identify skilled and unskilled mutual fund managers

Publications

"Efficient Skin Segmentation via Neural Networks: HP-ELM and BD-SOM," Swaney et al., Procedia Computer Science 53: 400-409 (presented at INNS Big Data 2015) Paper

- Designed and implemented a neural network-based system using MATLAB and CUDA (100x speed-up) to identify skin pixels in real-time.