COLIN SWANEY

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</> PROGRAMMING

GENERAL

Python
C
Javascript
UNIX
CUDA
HPC

SCIENTIFIC + DATA

MATLAB
R
PostgreSQL

MARKUP

LaTeX
HTML
CSS

COURSEWORK

DATA SCIENCE

Big Data Analytics (A)
Computer Intensive Statistics (A)
Computational Intelligence (A+)
Nonlinear Optimization (A-)

ECONOMICS

Microeconomic Theory (A-)
Econometric Theory (A-)
Applied Econometrics (A)
Finance Theory (A)
Advanced Empirical Finance (A)

LANGUAGES

Mandarin (Elementary)

EDUCATION

PHD, FINANCE

University of Iowa 2012-2017

MS, MATHEMATICS

University of Iowa 2009-2011

BS, MATHEMATICS + ECONOMICS

Kansas State University 2005-2009
- Cross-country and track & field team captain.
- All Big 12 and Academic All Big 12.

EMPLOYMENT

DECISION SCIENCE INTERN

Conversant, Chicago, IL Summer 2016
- Created a model of real-time bidding (RTB) process.
- Predicted RTB outcomes by simulating the model.
- Identified costly errors in RTB process.
- **Tools**: PostgreSQL, Python (pandas), Hadoop.

GRADUATE ASSISTANT

University of Iowa, Iowa City, IA 2012-2017

TEACHING ASSISTANT

University of Iowa, Iowa City, IA 2009-2011

RESEARCH

HIGH-FREQUENCY TRADING

- Wrote a Python package to process high-frequency trade data.
- Utilized a computing cluster to reconstruct terabytes of order book data.
- Applied machine learning methods to predict short-run asset returns.
- **Tools**: Python, MATLAB, HDF5, HPC, principal component analysis

IMAGE PROCESSING

- Implemented a customized self-organizing map algorithm.
- Optimized model parameters using high-performance computing cluster.
- Wrote a CUDA kernel to simultaneously classify all pixels in an image.
- Surpassed existing neural network classifiers in a skin-detection task.
- Presented at *International Neural Network Society 2015*.
- **Tools**: MATLAB, CUDA, HPC, neural networks.

MUTUAL FUNDS

- Constructed a SAS dataset of actively-managed mutual fund returns.
- Wrote R scripts to estimate a statistical model of fund performance.
- Validated the results using Monte Carlo experiments.
- **Tools**: R, SAS, expectation-maximization algorithms, bootstrap estimation.