

Jim / Xiaotian Zhang

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EDUCATION

California Institute of Technology, Pasadena, CA

- ❖ B.S. in Information and Data Science
- ❖ 9/2016 - 6/2020
- ❖ GPA 3.8/4.0

Completed Relevant Coursework

- ❖ Machine Learning Systems, Financial Machine Learning, Reinforcement Learning Research
- ❖ Statistics and Probability, Bayesian Data Analysis, Computational Physics, Linear Algebra, Python, C
- ❖ Multivariate Calculus, Differential Equations, Complex Analysis/PDEs, Quantum and Statistical Mechanics, Optics, Semiconductor Lithography

Relevant Coursework to be completed by June 2019

- ❖ Numerical Linear Algebra, Numerical Methods, Probability Models, Stochastic Processes, Scientific Computation, SQL Databases, Vision, Quantitative Risk, Mathematical Finance, Mathematical Fintech

RELEVANT COMPETITIONS AND RESEARCH

Caltech CS159 Research Project 2018

[“Reinforcement Learning for Path-Dependent Portfolio Optimization on the S&P 500”](#)

Caltech CS81 Independent Research Project 2018

“Prediction of Graduate School Application Results with Sentiment Analysis and SVM”

Caltech CS155 Kaggle 2018, Rank 2 (solo) / 74 teams

- ❖ Python [tensorflow, xgboost, scikit-learn, hyperas]
- ❖ [“ML Sentiment Analysis of Amazon Reviews”](#)

CQA Investment Challenge 2017-2018, Rank 20 / 101

- ❖ Python/Excel/CRSP/ALFRED (backtesting)
- ❖ Chicago Quantitative Alliance’s stock-picking competition for undergraduates

Citadel/Citadel Securities SoCal Data Open 2017

- ❖ Python/Excel/NoSQL
- ❖ Analysis of 2014-2015 Uber and public transportation data from the NYC area

Moody’s Math Modelling Contest 2016, Top 80 / 1084

- ❖ Mathematica/Excel
- ❖ [Neural networks and multivariate regression to analyze car-sharing services \(Zipcar\)](#)

SKILLS AND INTERESTS

Coding, in use: R, Python [numpy, pandas, keras, xgboost, sklearn, statsmodels, cython, PyAutoGUI]

Coding, can use: Mathematica, C/C++, MySQL, MATLAB, LabVIEW, [Arduino](#), UNIX

Communication: English (native), Chinese (native), Japanese (fluent), LaTeX, matplotlib/seaborn

Clubs: Caltech Student Investment Fund (President, \$675k AUM, Automated Trading), Caltech Badminton Club (Undergrad Representative)

Other Interests: Archery, Classical Guitar, Photography, Overwatch, League of Legends

PROFESSIONAL EXPERIENCE

SBB Research Group, Northbrook, Illinois

Quantitative Tactics Summer Intern 2018

- ❖ R / Python [pandas, sklearn, xgboost]
- ❖ Trading strategy creation and backtesting using R
- ❖ Live market indicator signal generation, data collection, and statistical analysis
- ❖ Structured note derivative portfolio feature distribution statistical analysis by simulation

California Institute of Technology:

Bellan Plasma Laboratory

Summer Undergraduate Research Fellow 2017

- ❖ Hardware/Python/LabVIEW/MATLAB
- ❖ [Laser-induced fluorescence for contactless temperature measurements on the Caltech Water-Ice Dusty Plasma](#)
- ❖ Developed fully automated laser scanning, fluorescence signal capture, and curve-fitting analysis using Python+LabVIEW
- ❖ Low-cost alternative to high speed video camera using LED strobe lamp and DSLR camera

QTG Capital, Shanghai, China

Quantitative Research Summer Intern 2016

- ❖ R [quantmod, RMySQL] / Excel
- ❖ Trading strategy creation and backtesting for the Chinese futures market using R
- ❖ Theoretical development of alternatives to common market indicator signals
- ❖ Reproduction of research paper trading strategy for Chinese bank stocks using Microsoft Excel

Stony Brook University:

Garcia Center for Materials Science Research

Summer Researcher 2015

- ❖ Chemical/Hardware/Excel
- ❖ Synthesis of gold, silver, platinum and alloy nanoparticles by the two-phase Brust method
- ❖ [SEM characterization and application to proton exchange membrane hydrogen fuel cells to enhance membrane catalytic efficiency](#)
 - **Goethe Award for Young Researchers**
Goethe-Institut Chicago
 - **First Place**, Connecticut Science Fair 2016
 - **Semifinalist**, Siemens Science Competition