# Chenyin Gao | Curriculum Vitae

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## EDUCATION

**Sun Yat-sen University (SYSU)** **Guangzhou**
*B.Sc. in Statistics* *2015–Present*

- **GPA**: Overall: 89.1/100; Major: 91.2/100
- **Core Courses**: Probability Theory, Mathematical Statistics, Applied Regression Analysis, C, C++, Matlab.

**Sun Yat-sen University (SYSU)** **Guangzhou**
*Minor in Finance* *2017–Present*

- **GPA**: 91.7/100
- **Core Courses**: Principles of Economics, Corporate Finance, Investments, Fixed Income Securities.

## HONORS

**2018** National Scholarship, China

**2018** 1st Merit Scholarship, School of Mathematics, Sun Yat-sen University

**2018** Honorable Mentions, Mathematical Contest in Modeling, COMAP

**2017** 1st Prize, China Undergraduate Mathematical Contest in Modeling, CSIAM

**2017** Honorable Mentions, Interdisciplinary Contest in Modeling, COMAP

**2017** 2nd Prize, The Chinese Mathematics Competitions (CMC), China Mathematical Society

**2017** 2nd Merit Scholarship, School of Mathematics, Sun Yat-sen University

## ACADEMIC EXPERIENCE

**Southern China Center for Statistical Science (SC2S2)** **SYSU**
*Research Assistant, Quantitative Trading Dept.* *Dec,2017–Present*

- Completed weekly training sessions for Python and basic conceptions of quantitative trading.
- Modeled the The Limit Order Book(LOB) future market depth in both ask-side and bid-side to capture extreme deviation from the mid price and programmed volatility strategies to exploit intraday mean-reversion margin.
- Constructed various statistical arbitrage strategies including cointegrative arbitrage and hidden Markov model in Python and back-testing the strategies in with real data (2016-2018) downloaded from Wind terminal and TradeBlazer.

**Monte Carlo EM (MCEM) Method to Derive Maximum Likelihood Estimates (MLE)** **SYSU**
*Leader, Statistical Program* *Mar,2018–Jun,2018*

- Led a team of 4 to derive estimators of unknown parameters based on EM algorithm.
- Iteratively estimate mle for 1000 times in the expectation of Monte Carlo log-liklihood based on Gibbs sampler incorporated a Metropolis-Hastings step for candidate acception and Newton-Raphson method for deriving no close-formed mle.
- Approximated the Newton-Raphson iteration with augmented posterior likelihood through Louis' Methods to achieve accelerated convergence in the neighborhood of mode.

**National Natural Science Foundation of China (NSFC) Program** **SYSU**
*Research Assistant, Risk Contagion and Network Analysis* *Oct,2017–Sep,2018*

- Conducted text-based analysis on the business scopes of all domestic listed companies via keywords extraction and vectorization.
- Computed the cosine similarities of company word-vector respect to the sector definition word-vector from Chinese Input-Output Association (CIOA).
- Applied nonlinear lasso-quantile regression in R and estimated $\Delta$CoVaR to explore the tail-risk spillover of paired stocks in Chinese financial market.

**Energy Profile of the States of Arizona, California, New Mexico and Texas** **SYSU**
*Leader, Data Exploration Analysis (Interpretation and Forecasting) Project* *Feb,2018–Feb,2018*

- Reorganized data regarding energy usage and production in each of the state and establish indicators to evaluate their usage of clean energy based PCA and cluster analysis.
- Estimated VARIMA model with Yule-Walker Estimators for trend analysis and forecasting.
- Assessed the finite sample coefficients distribution obtained by sequential bootstrapped data set and report its critical quantile value and confidence interval.

**Systematic Calibration and Graphic Computed Tomography (CT)** **SYSU**
*Leader, Digital Imaging Processing Program* *Aug,2018–Sep,2018*

- Calibrated the parameters, rotation axis and beam width, of CT scanner based on the data retrieved by detecting a known and fixed two-dimension medium.
- Manipulated the data produced by CT through integral inverse solution and Radon transformation to demonstrate the characteristics of an unknown medium including its location, shape and absorbency.
- Analyzed the spectral images based on Fourier transformation and enhance its quality by nonlinear filter.

## INTERNSHIP & TRAINING

**China Merchants Bank** **Shenzhen**
*Member, FinTech Agency Customers Department* *May,2018–Sep,2018*

- Utilized web crawler in Python to keep track with business auction information including Smart City, Wise Information Technology of 120 (WIT120) and etc.
- Accomplished FinTech training sessions for algorithm design, particularly in hot word acquisition through Bayes model averaging (BMA), Newton's law of cooling and cross entropy for coherent measurement.

**Deloitte Enterprise Consulting (Shanghai) Co., Ltd.** **Guangzhou**
*Analyst, Risk Advisory (RA),FSI* *Nov,2017–Mar,2018*

- Articipated in the overall risk management system building for a local Fortune 500 enterprise.
- Conducted stress tests using PCA, logistics regression and scenario analysis to predict future risk indicators.
- Implemented local iteratively reweighted least squares (IRLS) regression to enhance traditional VAR model in R.

## ACTIVITIES

**Global Financial Analysis** **Hongkong**
*Leader, International Finance Elite Program, Investment Services* *Jul,2017–Aug,2017*

- Collected raw data using web crawler and visualized effective factors after necessary data clearing and organization.
- Made an analysis investment report on the development of the Great Wall Automobile and demonstrated its expected. return and modified duration in the final presentation.

## COMPUTER SKILLS

**Programming Language** Python(Advanced),R(Advanced),C/C++(Intermediate)

**Software** Microsoft Office, Matlab, Lingo, Eclipse, Visual Studio, PHP, LaTeX

## ADDTIONAL

**Language** Mandarin (native), English(proficient)

**Standardized Test** TOEFL:103,GRE:329+4

**Interest** Sketch-drawing (Grade 8),Guitar-playing