

KEXIN (COCO) SHAO

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EDUCATION

NEW YORK UNIVERSITY

New York, NY

The Courant Institute of Mathematical Sciences

MS in Mathematics in Finance (2019 - 2020)

- **Coursework:** Black-Scholes model, VaR, linear regression, Brownian motion, XVA, MBS, Greeks, Monte Carlo and finite difference methods, data structures, mean-variance optimization

MARIETTA COLLEGE

Marietta, OH

BS in Math and BA in Economics & Music (2015 - 2019)

- **Awards:** Magna Cum Laude, Math & Music Capstone Award, Theodore Bennett Prize in Math, Lewis-Riggs Business & Economics Scholarship, First Chair Percussionist

EXPERIENCE

CREDIT SUISSE

New York, NY

Quantitative Risk Summer Associate - Global Credit Product (Summer 2020)

- Conducted CDX swaption book vulnerability review: investigated daily P&L driver by evaluating CDX volatility trading strategies and VaR methodologies so as to assess VaR net sensitivities and hedges efficiencies, and applied machine learning techniques to simulated the data distribution
- Analysis was integrated to CDS swaptions limits calculation process, led to an extension of the existing limit at that time and used for ongoing limit monitoring purposes
- Implemented single name CDS trading decision tree: processed large trading dataset in Python, identified non-index single name CDS, monitored trade volume, automated reports to traders

BBVA

Hong Kong, China

Global Finance Summer Analyst (Summer 2019)

- Analyzed clients' leverage and balance sheets, determined their profit model and business risks
- Recalculated VaR to update clients' credit limits and investigated industrial credit risk

LENOVO

Beijing, China

Data & Operation Summer Analyst, Enterprise Cloud Services Department (Summer 2018)

- Constructed Lenovo Cloud internal data platform, organized product usage and sales data with SQL
- Devised business plan, examined market structure, and analyzed competitors' business model
- Allocated accounting data of previous 3 years into the platform, business plan resulted in 5 contracts

PROJECTS

New York University

New York, NY

Estimating US Corporate Bond Recovery Value in Default using Machine Learning (Python / SQL)

- Processed 2005 to 2020 ICE monthly data of bonds with Python and SQL, calibrated credit spread benchmark by rating categories, replaced missing data with the median of each industrial sector
- Applied Beautiful Soup, requests, urllib, and Google knowledge graph API to scrape websites of bond issuers' info, mapped data across different platforms to prepare variables for recovery model
- Build models with logistic regression, decision tree, KNN etc. to fit corporate bond recovery value

FX Volatility Smile Calibration (Python)

- Using USDBRL market data, calibrated the SABR model parameters with the Hagan approximation
- Calculated call/put option strikes and volatilities for 5 market conventions: ATM, RR, and BF

Price Exotic options with Monte-Carlo Simulation (Python)

- Calibrated local volatility surface using 10000 generated stock price paths
- Applied Monte-Carlo algorithm to price the 1-year payoffs of 3 types of exotic options using 252 time steps: Capped quadratic options, Asian ATM call options, and barrier call options

SKILLS & INTERESTS

Programming / Software : Python, Java, SQL, R, C++, LaTeX, Bloomberg (BMC), EViews

Languages: Mandarin (native), English (fluent), French (elementary)

Interest: Basketball (Chinese National 2nd Level Athletic), Acapella, Percussion (drums/mallets/timpani)