# YUENING ZHANG

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## EDUCATION

**NEW YORK UNIVERSITY** New York, NY
**The Courant Institute of Mathematical Sciences**
**M.S. in Mathematics in Finance** (expected - Dec 2019)

- ***Coursework:*** Machine Learning, Fama-French Factor Model, Black-Litterman, Maximum Entropy Applications, Time Series, Hidden Markov Model, OOP in Java

**RUTGERS UNIVERSITY—NEW BRUNSWICK** New Brunswick, NJ
**BA in Mathematics and Economics,** *Summa Cum Laude* (Sept 2014 - May 2018)

- ***Coursework:*** Macroeconomics, Importance Sampling, Numerical Methods, CAPM, PCA, ARIMA

## EXPERIENCE

**New York University** New York, NY
***Tactical Asset Allocation Using Machine Learning*** (Sept 2019 - present)

- Constructed a superior portfolio using construction decisions via ranking asset class in order of highest to lowest risk-adjusted expected returns with ML techniques (Support Vector Machine, Random Forest, Gradient Boosting and etc.)
- Built a Hidden Markov Model to predict economic regimes; created an asset allocation strategy by applying ML algorithms to a number of key asset allocation decisions

**NumeriX LLC** New York, NY
***Intern*** (July 2019 - Aug 2019)

- Created generic pricing templates to price 500+ customized swaps with NumeriX Python SDK
- Developed a benchmark Hull-White one factor model to price the underlying swaption by Monte-Carlo simulation using Box-Muller algorithm and conducted risk analytics by computing the risk sensitives including Gamma, Vega, and Volga using Crank–Nicolson finite difference computation framework in NumeriX CrossAsset library
- Collaborated back-office to create new library features and honed communication skill

**CDH Investments** Beijing, China
***Intern*** (July 2018 – Aug 2018)

- Investigated 3 target companies' financial performance during preliminary due diligence and structured project briefs and pitchbooks, providing strategic and investment advice to the investment committee
- Analyzed 100+ start-ups financing data form CrunchBase and Capital IQ to track the market trends

## PROJECTS

**New York University** New York, NY
***Course Projects***

- ***Portfolio Optimization (Python):*** Implemented Markowitz mean-variance on seven funds to get minimum variance and maximum Sharpe ratio portfolio; improved robustness by estimating the expected return with Black-Litterman model and the expected covariance matrix with PCA
- ***K-Means Machine Learning Algorithm (Java):*** Performed Lloyd's Algorithm to cluster points in n-dimension by calculating distance; applied modified Lloyd's Algorithm to perform fixed-size clustering and compared efficiencies

**Rutgers University—New Brunswick** New Brunswick, NJ
***Honors Thesis: "Whether the Retail Purchase of Gold is an Indicator of Economic Activities"***

- Implemented Diffusion Index model on gold ETFs and investigated the impacts on the economy
- Improved forecasting accuracy for economics variables by adding factor lags to the benchmark model
- Checked the robustness by applying Granger-Causality test

## COMPUTER SKILLS/OTHER

***Programming Languages:*** Java, R, Python (Pandas, Numpy, Matplotlib), SQL (basic)
***Other Software:*** Excel (Advanced), PowerPoint (Advanced), LaTex
***Certificates:*** Exam P (Passed), FRM Part I,II Candidate, CFA Level I Candidate