

# Aakriti Mittal

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## EDUCATION

### COLUMBIA UNIVERSITY

#### Master of Science, Financial Engineering, 4.0/4.0

Coursework: Volatility Smile Modeling, Machine Learning, Monte-Carlo Simulations, Time-series & data Analysis, Continuous-time Asset Pricing, Stochastic Models, Optimization Methods, Applications Programming

New York, NY  
Sep 2016 – Dec 2017

### INDIAN INSTITUTE OF TECHNOLOGY KANPUR

#### Bachelor of Science, Economics, Minor in Artificial Intelligence, 9.6/10

Coursework: Macro Economics, Econometrics, Bayesian Data Analysis, Algorithms, Machine Learning

Kanpur, India  
Jul 2012 – May 2016

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## EXPERIENCE

### Summer Intern, Risk Team

Graham Capital Management

Norwalk, CT  
June 2017- Aug 2017

- Created an R Shiny app for mean-variance portfolio optimization with long-short positions and liquidity constraints
- Enhanced the performance of optimizer by using robust covariance matrix and portfolio rebalancing
- Assessed the relevance and non-linearity of Philips Curve in the light of technological developments and globalization

### Research Intern, Health Economics

IIM Bangalore

Bangalore, India  
May 2015 - Jul 2015

- Applied econometric and analytical skills to examine the problem of rising anti-microbial resistance in India
- Investigated causal relationship between prescriptions by untrained physicians and usage of antibiotics
- Trained fixed effect multivariate regression model on 1M prescription data points using Stata script

### Summer Intern, Financial Economics

IIT Kanpur, Summer Undergraduate Research and Graduate Excellence Program '14

Kanpur, India  
May 2014– Jul 2014

- Analyzed returns and volatilities of BSE Sensex and CNX Nifty stock indices using ARCH and GARCH time series models
- Studied impact of the Global financial crisis on the Indian financial markets for pre-crisis (2000-06), crisis (2007-10) and post-crisis (2011-14) periods
- **Publication:** Kulshreshtha, P., and Mittal, A. (2015), “Volatility in the Indian Financial Market Before, During and After the Global Financial Crisis”, Journal of Accounting and Finance, Vol. 15 (5)

### Core Team Member, Counseling Service

IIT Kanpur

Kanpur, India  
Mar 2014- Apr 2015

- Led a team of 130 student guides to organize a 15-day Orientation program for 830 freshmen
- Collectively overlooked the management and allocation of 1.5M INR of funds for yearlong welfare activities of the service
- Tutored emotionally and academically deficient students to achieve Zero termination term

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## ACADEMIC PROJECTS

### Portfolio Optimization

Nov 2016 – Dec 2016

- Developed a program using C++, Python and Gurobi script to run over Russel 2000 historical stock data
- Implemented Sharpe ratio maximizing portfolio optimization problem using PCA approximation

### Bayesian Data Analysis

Mar 2016 – Apr 2016

- Employed Bayesian method analysis to analyze influence of demographic factors on crime rate in US
- Created a MATLAB program to estimate Bayesian Quantile Regression model using Gibbs sampling

### Machine Learning

Feb 2016 – Apr 2016

- Performed object classification in video data, applied semi-supervised learning approach in Python
- Employed Convolutional Neural Networks and Kalman filter for features extraction, k-nearest neighbor algorithm for classification

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## HONORS AND SKILLS

- **Computer:** C/C++, R, Python, MATLAB, Latex, Stata, VBA, Excel, Gurobi, R Shiny
- Appointed as **IEOR Student Ambassador'17**, to promote the program and assist with the screening process of graduate students
- **General Proficiency Medal '16**, for the best academic performance among graduating students in Economics Department, IITK
- Received **KVPY fellowship '12** awarded by the Govt. of India to top 400 students in the country for excellent research aptitude
- Selected for **NTSE scholarship (2008)** given by the Govt. of India to top 0.1 percentage students in 1 million applicants