IONKENG HO

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EDUCATION

Expected 12/23	**NEW YORK UNIVERSITY**	New York, NY

The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance
- ***Expected Coursework:*** Currency Derivatives, Interest Rate Models, Convex Optimization, Markowitz theory, Time Series, Credit Modeling, Almgren-Chriss, Black–Litterman–Bayes

09/18 - 06/22	**UNIVERSITY OF CALIFORNIA SANTA BARBARA**	Santa Barbara, CA

B.S. in Physics and B.S. in Financial Math & Statistics
- ***Coursework:*** multivariable calculus, probability and statistics, linear algebra, ODE&PDEs, complex analysis, numerical methods, regression, stochastic process, machine learning
- ***Honors/Awards:*** Honors (Top 8% GPA in College of Letters and Science)

EXPERIENCE

01/22 - 03/22	**UNIVERSITY OF CALIFORNIA SANTA BARBARA**	Santa Barbara, CA

Learning Assistant, Special Relativity Class
- Held weekly office hours to answer students' questions about course material and homework; graded 30 assignments and exams
- Discussed students' performance with professor; participated in selecting homework problems

08/21 - 09/21	**SHENZHEN TENGYIN INFORMATION CONSULTING**	Shenzhen, China

News Department Assistant
- Researched financial news daily; drafted 20 morning briefings to customers by summarizing news and predicting how it may affect global markets
- Organized and analyzed provincial government debt data; wrote comprehensive report on local governments' financial conditions for inclusion in company publication

PROJECTS

09/22 - 12/22	**NEW YORK UNIVERSITY**	New York, NY

Pricing an Exotic Option using Hull-White Model (Python)
- Retrieved past data of variables that define the option (e.g. Nikkei-225 index, USD LIBOR rate, US 10Y Treasury) using FRED API
- Derived dynamics of Nikkei index, forward rate, and risk free rate and calculated parameters of the model using past data and calibration of the Hull-White Model
- Built an automated program that visualizes predictions of future data (e.g. the Nikkei index) and outputs the option price given inputs (e.g. relative strike prices, maturity date, settlement date)

04/22 - 06/22	**UNIVERSITY OF CALIFORNIA SANTA BARBARA**	Santa Barbara, CA

Solving Acoustic Wave Equations Using Crank-Nicolson Method (Python)
- Proved stability of Crank-Nicolson Method; used it to write simulation of wave equation into linear system of equations in lexicographical order
- Applied ADI algorithm to solve the linear system; obtained approximate solution, which achieved less than 1% deviation from exact solution

09/21 - 12/21	**Applying Machine Learning in Finding Relationships Between Poverty and Education Level** (R)

- Pruned data from United States county-level census and education using PCA to 12 PCs while capturing 90% of variance
- Applied decision tree and logistic regression to pruned data; observed that poverty level of counties was strongly related to number of people who had less than a high school diploma
- Used cross-validation to optimize parameters used in above models; reduced test mean square error by 20%

COMPUTATIONAL SKILLS / OTHER

Programming Languages: Java, Python, R
Languages: English (fluent), Cantonese (native), Mandarin (native)
Activities: 2018 International Physics Olympiad Macau Team; won 4th place in UCSB poker tournament