ANNA (GE) JING

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EDUCATION

Expected 12/25 **NEW YORK UNIVERSITY** New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance
- ***Coursework:*** stochastic processes, Fama-French, Brownian motion, object-oriented programming (Python), decision trees, machine learning, time series analysis

09/20 - 05/24 **SWARTHMORE COLLEGE** Philadelphia, PA
B.A. in Mathematics and Economics
- ***Coursework:*** linear algebra, differential equations, stochastic and numerical methods, real analysis, mathematical modeling, Bayesian statistics, probability, business finance
- ***Honors/Awards:*** Recipient of Deborah A. DeMott '70 Student Research and Internship Fund, Runner-up in Sigma Xi International Forum of Research Excellence

EXPERIENCE

06/23 - 08/23 **CHINA INDUSTRIAL BANK** Xi'an, China
Software Development Intern (Python)
- Optimized bank operations by reducing request processing time by 35%
- Engineered Python-based tool to consolidate data for early repayments with China Banking and Insurance Regulatory Commission requirements
- Streamlined migration processes for bank's pledge management system via low-code development platforms

PROJECTS

SWARTHMORE COLLEGE Philadelphia, PA

06/22 - 12/23 **Mathematical Modeling for Sound Location Processing in Auditory Neurons (Python, C++)**
- Built mathematical models to simulate auditory neurons and medial superior olive nerves' stochastic response to cochlear implant stimulation in Python and C++
- Constructed 250 GB database in SQL and Redis to store neurons' random responses, optimizing search efficiency and reducing simulation time by 40% via integrating to HPC
- Enhanced model accuracy and reduced response time by 65% after integrating non-linear random variables for potassium and sodium channels' voltages
- Collaborated with University of Washington biotechnology center on improved models with real data to develop reduced noised cochlear implants

01/23 - 05/23 **Statistical Analysis of US Elderly Population's Impact on Education Expenditures (Stata, R)**
- Improved statistical testing power and resolved measurement error endogeneity using IV, multivariable, and 2SLS regressions, as well as fixed effect model
- Proved significant impact of US elderly population percentage on district-level education expenditures, with p-value <0.001
- Consolidated and communicated complex statistical findings and their implications succinctly through reports and presentations to Economics Department

11/22 - 11/22 **Application of Different Stochastic Methods in Black-Scholes (Python, C++)**
- Remodeled Black-Scholes pricing using Euler-Maruyama, Milstein, and first-order stochastic Runge-Kutta methods with Monte-Carlo simulation in Python and C++
- Applied models to simulate actual financial processes, achieving numerical solutions with errors less than 10^{-4}

COMPUTATIONAL SKILLS / OTHER

Programming Languages: Python, C++, Stata, R, SQL
Languages: English (fluent), Mandarin (native), Japanese (conversational)
Interests: Drumming tournament performer, Swarthmore Taiko Ensemble; high-altitude trekking, summited 5 mountains above >2.8 miles in Nepal and Tibet