

# KARL XIAO

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5032 Forbes Avenue SMC 7023, Pittsburgh, PA 15289

## EDUCATION

**Carnegie Mellon University, Mellon College of Science**

**Graduating May 2022**

**Degree** B.S. in Computational Finance and Computer Science **GPA:** 3.84/4.00  
**Coursework** Imperative / Functional Programming, Algorithms, Computer Systems, Linear Algebra, Mathematical Finance, Calculus, Probability and Statistics, Economics, Accounting

*Pittsburgh, PA*

## EXPERIENCE

**15-251 Great Theoretical Ideas in Computer Science, School of Computer Science**

**Jan 2020 –**

*Course Tutor*

*Singapore, Singapore*

- Meet 1-on-1 with a tutee for two hours per week to review important ideas from class such as Turing Machines, Graph Theory, P vs NP, and Cryptography, and practice solving conceptual problems

**Summer Undergraduate Research Program in Computational Finance**

**Jun 2019 | Jul 2019**

*Research Associate*

*Pittsburgh, PA*

- Investigated using Python and C code the pricing of Forex options under various interest rate, volatility, and payoff assumptions within the Binomial and stationary Black-Scholes frameworks
- Performed simulations to show the convergence of early exercise boundaries in multi-period Binomial models to values predicted by the stationary Black-Scholes ODE for perpetual options
- Visualized simulation results of asset pricing using Matplotlib's scientific graphing functionalities

**MoneyThink CMU**

**Jan 2019 | Dec 2019**

*Mentor Captain*

*Pittsburgh, PA*

- Provided weekly 1-hour mentorships for 20+ High School Juniors and Seniors at various local high schools on personal finance topics such as savings, credit cards, loans, taxes, and college preparation
- Headed a 3-man team in coordinating with school authorities and delivering presentations at each session

**Munich Re Singapore Branch**

**Nov 2017 | May 2018**

*Intern, APAC1 Life Valuation*

*Singapore, Singapore*

- Harnessed Excel's VBA Macros to optimize data consolidation from regional offices and determine key indicators such as fund solvency and Embedded Value that are required for statutory reporting
- Scrutinized and summarized in an Excel-based dashboard the features and performance of 40+ overseas reinsurance treaties that were slated for incorporation by mid-2018 into Singaporean accounts

## LEADERSHIP

**Undergraduate Consulting Club, Carnegie Mellon University**

**Oct 2018 -**

*Pro-Bono Lead*

*Pittsburgh, PA*

- Liaise with a multinational Healthcare startup for an ongoing project on Indian and U.S. market research
- Aided a Pittsburgh-based educational non-profit's sponsor acquisition efforts in 2018-19 by evaluating more than 100 potential partners and creating a long-term framework for sponsorship retention

**Singapore Students Association, Carnegie Mellon University**

**Aug 2018 -**

*Treasurer*

*Pittsburgh, PA*

- Construct and disburse a \$6,000+ annual budget that allows the SSA to continually organize events that foster team building, celebrate local festivals, and promote Singapore culture in large-scale campus events
- Maintain the club's good financial standing by approving and verifying all expenditures as Authorized Signer

## HONORS

Putnam Competition 2019, *Results TBD*

**Dec 2019**

Quantathon 2019, *Honorable Mention (Top 7 of 53 teams), Carnegie Mellon University*

**Feb 2019**

Keith Block Entrepreneurship Competition, *1st Place, Carnegie Mellon University*

**Nov 2018**

## SKILLS and INTERESTS

**SOFTWARE and PROGRAMMING:** Python, C, Linux, R, HTML/CSS, Standard ML, Java, SQL, VBA

**LANGUAGES PROFICIENCY:** English (native), Mandarin (native), French (fluent), Spanish (basic)

**EXTRACURRICULAR INTERESTS:** Running, Backpacking, Symphonic Band (Saxophone), Watching Old Movies