

# KARL XIAO

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## EDUCATION

### Carnegie Mellon University

B.S. in Computer Science, B.S. in Computational Finance

**Expected May 2022**

*Pittsburgh, PA*

- **GPA:** 3.90/4.00, **SAT:** 2390/2400
- **Coursework:** Distributed Systems, Machine Learning, Stochastic Calculus, Algebra, Real Analysis, Economics

## WORK EXPERIENCE

### SEA Group

Software Engineer Intern

**Jun 2020 | Aug 2020**

*Singapore, Singapore*

- Implemented UI/UX features in ReactJS to better aggregate data from mobile apps into a web-based HR solution
- Built HTML/CSS- based templates for websites to deliver multilingual and responsive notification emails to users
- Added customizable components in Typescript to a proprietary UI library for future use in front-end development

### Summer Undergraduate Research Program in Computational Finance

Research Associate

**Jun 2019 | Jul 2019**

*Pittsburgh, PA*

- Investigated under Dr. William Hrusa the pricing of Forex Options with varying payoff and market assumptions
- Performed Python and C simulations to show the convergence of optimal early-exercise boundaries in multi-period Binomial models to theoretical Black-Scholes ODE values for long-maturity options
- Visualized asset pricing as a function of time and underlying stock price using Matplotlib's graphing functionalities

### Singapore Students Association, Carnegie Mellon University

Treasurer

**Feb 2019 | Feb 2020**

*Pittsburgh, PA*

- Maintained the financial health of the Association by crafting and prudently disbursing a \$6,000+ annual budget
- Organized large-scale events such as team-building activities, campus outreach, and celebrations of local festivals

### MoneyThink CMU

Mentor Captain

**Jan 2019 | Dec 2019**

*Pittsburgh, PA*

- Provided weekly hourlong mentorships in personal finance to 30+ High School students from local public schools
- Worked with schoolteachers to deliver lessons on savings, credit cards, taxes, insurance, college, and other topics

## PERSONAL PROJECTS

### Todo-Logs

Languages & Frameworks: ReactJS, Django

**Winter 2020**

*Pittsburgh, PA*

- Deployed a full-stack WebApp to store and visualize a list of completed and ongoing tasks in various formats
- Secured all HTTP requests with JSON Web Token (JWT)-based authentication within a RESTful architecture

### Visual Question Answering (VQA)

Languages & Frameworks: Python, Pytorch

**Nov 2020 – Dec 2020**

*Pittsburgh, PA*

- Answered blind people's questions about self-taken images with Attention-based Convolutional Neural Networks
- Achieved 4% higher test accuracy than a strong baseline with feature-aware CNN models and data augmentation

### Stock Market Tracking

Languages & Frameworks: Microsoft Excel, Power Query M, VBA, Google API

**Summer 2018**

*Singapore, Singapore*

- Created Excel spreadsheet to automatically extract Equities and FX data from Google Sheets and Google Finance
- Used *Get and Transform* as well as VBA macros to transform data into tables and charts for technical analysis

## SKILLS and INTERESTS

**Technical Skills:** C, C++, Go, JavaScript, HTML/CSS, Python, R, Linux, Standard ML, Java, Bash, VBA

**Languages:** English (Native), Mandarin (Native), French (Fluent), Spanish (Basic)

**Extracurriculars:** Running, Solo Travelling, Piano, Saxophone, Old Movies