

# Kyle Xiao

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## PERMANENT ADDRESS

799 Locks Way  
Augusta, GA 30907

## CURRENT MAILING ADDRESS

6820 Oswego Place, Unit 503  
Seattle WA, 98115

## EDUCATION

### University of Washington

#### M.S. Computer Science / Engineering

Anticipated MS June 2022

Major GPA: 3.90 Cumulative GPA: 3.90

### Georgia Institute of Technology

#### B.S. in Computer Science w/ Math Minor

Graduated May 2020

Major GPA: 4.0 Cumulative GPA: 4.0

## WORK EXPERIENCE

### Amazon, Seattle WA

#### Applied Science Internship

Summer 2021

- Developed causal inference model for predicting heterogeneous treatment effects of APR pricing
- Created APR pricing pipeline, developing mathematical optimization model for total economic profit with operating constraints, and implemented constrained convex optimization techniques
- Improved credit pricing by 8% higher loan originations and 31% gross interest profit for over \$50M in loans

### Citadel Securities, Chicago IL

#### Quantitative Trading Internship

Summer 2020

- Created backtesting API for OTC/ADR equity desk, and applied towards market making strategies
- Completed intern training program under ETF group including market structure and quantitative analysis on products such as fixed income, equities, and derivatives.
- Competitions including automated ETF trading, options math, and poker. Ranked top in analyst competition.
- Discovered \$8M business opportunity involving market making NMS ADR products

### Paul G. Allen School, University of Washington CSE Department

Summer 2020-Present

#### Funded Research Assistant

- Student doing research under Dan Weld working on improving conference metareviews and argument mining.
- Received fellowship guaranteeing funding until graduation with research assistant responsibilities

### Microsoft, Microsoft City Center

Summer 2019

#### Applied Research Internship

- Created custom dataset and applied generative adversarial model for visual search query reformulation
- Submitted patent applications on color reformulation and GAN based attribute reformulation
- Shipped color-based approach to query reformulation in Bing Multimedia and ran DSAT analysis

### Microsoft Explore, Microsoft Redmond

Summer 2018

#### Summer Internship

- Aggregated and visualized data on developer telemetry for leadership in Windows and Azure Eng. Systems (ES)

### Entertainment-Intelligence Lab, Georgia Institute of Technology

#### Research Assistant

Winter 2017 - Present

- Received president's undergraduate research award (PURA) funding to develop reinforcement learning grammar
- Collaborated with MSR Montreal and DARPA on extending the Malmo reinforcement learning framework
- Created feature generation pipeline by utilizing convolutional deep learning on audio spectrographs
- Paper accepted into Experimental AI in Games workshop by AIIDE conference, <https://arxiv.org/abs/1806.11170>

### Mapping Topological Class Groups, Georgia Institute of Technology

Fall 2017 - Winter 2017

#### Research Assistant

- Algorithms on complex topologies like Dehn twists and Lickorish manifolds, <https://github.com/b5strbal/macaw>

## PROJECTS

- **Gesture Recognition for Cerebral Palsy**, <https://github.com/jamiepinheiro/CerebralPalsyComprehensionML>
- **Augmented Reality Laser Tag**, <https://devpost.com/software/retro-lasar-bash>
- **Parallel Computing in Molecular Dynamics**, <https://github.com/kylepxiao/ParallelNetworkProteinFolding>

- **HearATale Children's Literature and Phonics Website**, <http://hearatale.com/>

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#### RELEVANT COURSEWORK

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Machine Learning for Trading and Finance	Deep Learning and Special Topics
Natural Language Processing	Statistical Methods and Modeling
Artificial Intelligence and Machine Learning	Object Oriented Programming Design and Implementation
Data Structures and Algorithms	Machine-level Networking, Computing, and Organization

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#### TECHNICAL SKILLS

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- **Programming Languages:** Python, C, C++, Java, PHP, HTML, CSS, JavaScript (Node.js, JSON), SQL, GML, Arduino
- **APIs/Libraries:** Pytorch, Tensorflow, SDL, Boost, Swing, BootStrap, JQuery, Twit, PyGame, MSMBuilder, MMTK
- **Applications:** CMD, Bash, Git, XAMPP, Azure, AWS, Firebase, GDB, Bug Tracking Software

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#### HONORS AND AWARDS

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- **"Best Financial Hack" at HackGT 4: New Heights**, Fall 2017, <https://devpost.com/software/holeinmywallet>
- **1<sup>st</sup> Place Hack at GIT MAD Appathon**, Fall 2017, <https://github.com/kylepxiao/Hustlr>
- **USA Computing Olympiad Gold Division**, Fall 2015

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#### PAPERS AND MANUSCRIPTS

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- Zhiyu Lin, **Kyle Xiao**, and Mark Riedl. Generationmania: Learning to Semantically Choreograph. volume abs/1806.11170. *Proceedings of the AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, 2018. <https://arxiv.org/pdf/1806.11170.pdf>
- **Kyle Xiao**. Machine Learning based Procedural Content Generation in Semantic Choreography. [http://kylexiao.xyz/semantic\\_choreography\\_thesis.pdf](http://kylexiao.xyz/semantic_choreography_thesis.pdf), 2019.
- **Kyle Xiao**, Houdong Hu, and Yan Wang. Applications of Generative Adversarial Models in Visual Search Reformulation. volume abs/1910.12460. 2019. <https://arxiv.org/pdf/1910.12460.pdf>
- **Kyle Xiao**, Kushagr Singh, and Mark Riedl. AdventumRL: A Quest Based Reinforcement Learning API. <https://github.com/kylepxiao/AdventumRL/blob/master/paper.pdf>, 2019.
- **Kyle Xiao**, Vignesh Raman, Shreyas Casturi, Jonathan Chen, and Balazs Strenner. Macaw: Simplifying curves on surfaces. <http://kylexiao.xyz/macaw.pdf>, 2017.