

Alex Wang

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SUMMARY

Languages: C, C++, Python, Java, SQL, HTML/CSS, JavaScript

Frameworks/Tools: NumPy, Pandas, MongoDB, React, Redux, OpenGL, Git

EXPERIENCE

Hudson River Trading – Core Intern

Jun 2020 – Aug 2020

- Introduced code generation to create Python bindings for HRT's C++ codebase, resulting in **100,000+** lines of generated code.
- Designed debugging tools to map raw market feed data to FPGA message data for HRT's testing environment.

Citadel – Quantitative Research Intern | GQS

Jan 2020 – Apr 2020

- Researched unsupervised **dimensionality reduction** techniques for productionizing models trained on huge feature sets.
- Modified machine learning pipelines to automate feature selection in model training and inference.

Citadel – Software Engineering Intern | Commodities

May 2019 – Aug 2019

- Aggregated data sources to track the voyages of thousands of ships daily in order to model global crude supply and demand.
- Optimized caching of US Crude Microbalance model to speed up overall runtime by over **50%**.

Wish – Data Engineer Intern | Ad Monetization

Sept 2018 – Dec 2018

- Increased click rate of Product Boost ads by over **20%** by improving the classification methods of promoted products.
- Introduced new ad revenue impression sources to add an estimated **\$150,000** in weekly ad revenue.

IBM – Core Software Developer Intern | Watson Financial Services

Jan 2018 – Apr 2018

- Improved retrieval times of document records by **30%** by optimizing JPQL queries and migrating document records to improve scalability.
- Integrated PDF.js library into Watson Regulatory Compliance product to enable client side rendering/searching of documents.

RESEARCH

University of Waterloo – Research Assistant

Sep 2019 – Dec 2019

- Researched the conditional independence properties of sparse **triangular transport maps** under Professor Yaoliang Yu.

University of Waterloo – Research Assistant

Jan 2019 – Apr 2019

- Worked under Professor Alexander Wong to develop **computational lenses** for light field microscopy in computerized cancer analysis.

PROJECTS

Python Neural Network – Python, NumPy

- Wrote neural network library and implemented **backpropagation algorithm** from scratch using NumPy.

Boulder Game Engine – Java, OpenGL

- Built **game engine** with functionality for 3D graphics, procedural terrain generation, and collision detection using **OpenGL**.

EDUCATION

University of Waterloo Computer Science and Statistics Double Major
3.94 GPA

2016 – 2021

- Combinatorics and Optimization Minor, Computational Math Minor
- President's Scholarship of Distinction, Dean's Honours List every term