Matthew May

Computer Science | University of Waterloo

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Skills

Languages: C++, Python, Go, C, SQL, JavaScript, Bash

Tools and Frameworks: Kafka, Hive, Airflow, Google Test, Neo4j, Bazel, Git

Experience

Hudson River Trading — Software Engineer Intern, Core Team **Summer 2020**

- (NDA) Working on low latency automated trading systems using C++ and Python

Facebook AI Research — Software Engineer Intern, AI Habitat **Winter 2020**

- Improved realism in Habitat-Sim, an open-source, high performance 3D simulator for training embodied AI agents, by designing and implementing configurable lighting using the Phong shading model
- Increased rendering speed of semantic meshes by 200% using a custom mesh splitting algorithm

Citadel Securities — Software Engineer Intern, Systematic Trading Technology **Summer 2019**

- Implemented a distributed, fault tolerant, and scalable real-time order reporting system with exactly-once delivery semantics using C++, Apache Kafka, and librdkafka
- Increased single partition throughput by 400% by creating a benchmarking framework to identify bottlenecks, and implementing optimizations such as batching, using reader-writer locks, and reducing memory copies

University of Waterloo — Research Assistant, Advisor: Semih Salihoglu **Winter 2019**

- Developed a multithreaded graph algorithm to enumerate maximal cliques in a graph using C++
- Implemented dynamic thread load balancing by storing search subtree nodes on a shared thread-safe stack

Wish — Data and Relevance Engineer Intern, Search and Recommendation **Fall 2018**

- Improved product quality by finding popular merchandise substitutes using k-nearest neighbour search in product embedding vector space
- Reduced product exploration latency by over 25ms, by parallelizing Solr search queries using a Go microservice

Personal Projects

Basic Compiler and Assembler — C++, MIPS assembly

- Built a compiler capable of compiling a subset of C into MIPS assembly

Insincere Questions Classifier — Keras, Pandas, NumPy

- Developed a model to identify misleading questions by ensembling CNNs and LSTMs
- Improved F1 score by leveraging multiple source word embeddings to create meta-embeddings

Education

University of Waterloo, Candidate for Bachelor of Computer Science **2016-2021**

- 3.99 GPA, Dean's Honours List (all terms)
- Relevant courses: Operating Systems, Computer Networks, Distributed Systems, Algorithms