WALKER HILDEBRAND

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TECHNICAL STRENGTHS

Languages C++ · Python · C# · Javascript · Shell Scripting · Java · SQL
Tools UNIX · Git · PyTorch · Node.js · .NET · gdb · NoSQL Databases · OpenGL

EDUCATION

University of Waterloo *April 2022*
Bachelor of Computer Science *Major Average: 88%*
Honours Computer Science – Co-op Program (Distinction)

WORK EXPERIENCE

Facebook/Meta | Network Delivery Systems - Monitoring *August 2021 - December 2021*

- Implemented a stream processing pipeline to analyze the health of Meta's entire delivery network
- Reduced error detection latency from 2+ hours to live results on a scale of 2 TB / 24 hours
- Redesigned device failure detection algorithm, improving signal-to-noise ratio by a factor of 2.5
- Conducted and presented research on live network analysis to aide future iterations of the project

NVIDIA | TensorRT - Graph Compiler Integration *January 2021 - April 2021*

- Implemented validation for engine compilation and inference of Tacotron2 + Waveglow speech synthesis using Jasper model for speech recognition, primarily testing dynamic sequence length input
- Developed accuracy tests for TensorRT's INT8 support via Quantization-Aware Training with BERT, compared to ONNX runtime and native PyTorch over the Stanford Question Answering Dataset
- Prepared the release of TensorRT 8.0 by working on several compiler-related, release-blocking bugs

NVIDIA | Hardware Infrastructure *May 2020 - August 2020*

- Implemented a QuadTree class and nearest neighbour algorithm using a thin template idiom
- Optimized object deserialization and cached common resources, reducing boot time from 6 mins to 1
- Implemented several important general enhancements throughout the suite of NVIDIA's CAD tools
- Researched and implemented changes for porting several CAD tools to use an updated version of Qt and summarize methods for faster rendering of objects using the Qt's OpenGL interface

McAfee | WebAdvisor *Sep 2019 - Dec 2019*

- Developed a messaging system between the testing framework and extension that exposed internal functionality to testers, but kept the application's internals secure from the public
- Created a proxy server with C# and Powershell to mimic responses of the extension's HTTPS requests
- Researched, built and modified Chromium source code to provide a McAfee browser proof of concept
- Created an internal tool for manipulating and backing up the LevelDB and IndexedDB implementation of Chrome and Firefox's `browser.storage.local` API

Rocscience | Settle3D *Jan 2019 - Apr 2019*

- Created a CAD module to model the construction of complex 3D embankment loads and conduct time-dependant vertical soil consolidation analysis using C++, MFC and OpenGL
- Upgraded geometric and mathematical tools, using more efficient & accurate, graph theory methods
- Redesigned and improved several modules, improving cohesion, maintainability and abstraction