

TREVOR VAN LEEUWEN

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WORK EXPERIENCE

Qualcomm — Engineer, Audio Frameworks

C, C++, C#, python

April 2019 – Present

Common Audio Driver

Developed DSP driver common to all Qualcomm chips and OSs as part of broad audio framework rearchitecture. Driver is responsible for setup of usecase and data transfer to DSP, abstracting the DSP interface

- Built performant, low-profile and modular code using restricted language set to support of range of SoCs, including IoT/embedded
- Built performant memory management system for ad-hoc data memory allocation as part of Android Codec 2.0. Prior system required data memory allocation at use-case setup
- Migrated common driver to internal open-source product. Mentored & empowered other engineers to contribute and debug

Audio Context Detection

- todo

Tools & Mentoring

- Created debugging tool to log binary communication between processors and create human-readable sequences, with automatic error detection
- Mentored 3 interns, helped onboard & orient several new hires

Microsoft — File System Developer

C, C++

Aug – Dec 2017

- Designed and implemented dehydrated cloud file copy protocol, saving significant bandwidth and disk space when a copy is issued on cloud-stored files (i.e. on OneDrive)
- Filed patent on the cloud copying technique

Magna International — Database Developer

MySQL, VB.NET

Aug – Dec 2016

- Overhauled Defect Detection & Classification system backend to improve mean query time by a factor of 5
- Optimised database server job scheduling to reduce performance bottlenecks, allowing all defects to be properly tracked. Previously 15% of defects were not tracked

PROJECTS

Chorus — Inexpensive High Quality Recording (Capstone)

Python, MATLAB, PyTorch, FASST

- Using machine learning and digital signal processing techniques, created a system to allow amateur musicians to record better quality vocals using cheap, available microphones (cell phones)
- Focused on applications for *a capella* groups, using source separation to allow independent mixing of voices recorded together

EDUCATION

University of Waterloo, Canada

- Bachelor of Applied Science, 2018

COMPUTER ENGINEERING

With Distinction

- Key courses: Programming for Performance, Digital Signal and Image Processing, Computer Architecture, Embedded Systems

TECHNICAL SKILLS

SKILLED	C/C++, Java, SQL
FAMILIAR	Python, Perl, C#, Javascript
TOOLS	Git, P4, GDB, WinDbg, Bash, Valgrind suite

INTERESTS

- Competitive sailor. Dinghy, inshore keelboat and ocean racing
- Leadership roles in Qualcomm new grad network, UW Orientation Week, UW grad committee
- Nordic ski coach
- Calligraphy
- Fluent in English and French, basic knowledge of Dutch

OTHER INTERNSHIPS

Shopify Jan – Apr 2016
Full Stack Developer

TD Canada Trust May – Aug 2015
Android Developer

Nanometrics Sept – Dec 2014
Firmware Developer

Recognia Jan – Apr 2014
Backend Developer