Trevor van Leeuwen

vanleeuwen.trevor@gmail.com
+1 (619) 885-3927

Work Experience

Qualcomm — Engineer, Linux Audio Software
C, C++, python, C#   April 2019 – Present

Common Audio Driver (AudioReach)
Developed audio DSP driver common to all Qualcomm chips and OSs as part of broad audio framework rearchitecture (AudioReach). Driver is responsible for setup of usecase and data transfer to DSP, abstracting the DSP interface
- Built performant, low-profile and modular driver using restricted language set to support full range of SoCs, including IoT and Auto
- Component owner for DSP management layer. Ensured quality of contributions. Point of contact for complex bugs
- Designed & built memory management system for ad-hoc data memory allocation for Android Codec 2.0. Prior system required data memory allocation at use-case setup

Open Source AudioReach Framework
Released AudioReach framework as internal open source project. Working towards release as external open source project.
- Adapted Android and DSP code into generic linux base. Moved build system to CMake from custom internal tool
- Ensured quality in contributions from wide user base by implemented procedures and automation for tests, style, and builds
- Ensured compliance and safety of public framework release through work with open source legal team

Tools & Mentoring
- Created debugging tool to log communication between processors and make it human-readable, with automatic error detection
- Mentored 3 interns, helped onboard & orient several new hires

Microsoft — File System Developer
C, C++   Aug – Dec 2017
- Implemented dehydrated cloud file copy protocol, saving significant bandwidth and disk space when copying cloud-stored files
- 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 job scheduling to reduce bottlenecks, allowing all defects to be 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++, SQL
Familiar	Python, bash, Java, C#
Tools	Git, P4, GDB, Bash, Valgrind
Concepts	

Interests

- Competitive sailor
- Leadership roles 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