David H. **Benson**

Full-stack software developer, audio specialist

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Experience

MCGILL UNIVERSITY | Research Assistant (Software Developer)
2013 – Present | Montreal, QC

- Built software tools to support research activities in the Sound Recording Area at the Schulich School of Music (C/C++, Javascript/Web Audio API/Ruby on Rails, Max/MSP)
- Wrote a plugin for controlling multichannel reverberation that was ultimately used in the Disney feature film Maleficent (C/C++/JUCE)
- Supervised a small team of metadata specialists and junior programmers
- Co-authored papers for international conferences, contributing expertise in statistics and signal processing (R, Matlab)

WEBTET.NET | Full-Stack Software Developer
2011 – Present

- Developed a web application to teach critical listening skills to sound engineers (Javascript/Web Audio API/Ruby on Rails)
- Maintained near-constant uptime for over a decade as webtet.net became the most popular site of its kind, serving thousands of students each month
- Wrote custom multithreaded DSP code for dynamics compression
- Minimized code regressions via an extensive test suite

Skills

Proficient C • C++ • Javascript • Web Audio API • Max/MSP • Ruby on Rails • Matlab • Git

Familiar Python • JUCE • AWS • SQL • Node.js • Shell script

Activities and Interests

- Music. Singer with the Montreal Symphony Orchestra Chorus; one-time backup vocalist for Quebec pop/rock bands including Voivod and Malajube
- Statistics, machine learning, deep learning

Education

PHD IN SOUND RECORDING | McGill University 2022

- Researched intuitive user interfaces for reverberation effects [click for demo]
- Coursework included DSP, computer graphics and music & machine learning

MA IN MUSIC TECHNOLOGY | McGill University 2007

- Researched computationally efficient headphone-based spatial audio
- Outstanding Teaching Assistant Award

B.MUS IN MUSIC TECHNOLOGY & VOICE PERFORMANCE | McGill University 2004

- High Distinction (GPA 3.8/4)
- Coursework included real-time audio application development, data structures & algorithms, object oriented design, and other computer science fundamentals