

Matt Ingalls

http://sonomatics.com matt@sonomatics.com
106 Fairmount, Oakland, CA 94611
[510] 444.3595

SUMMARY

Over 10 years experience in Software Engineering and Design

Audio DSP, Synthesis, MIDI, and Interactive Music

Macintosh Application Development

Cocoa, Carbon, Xcode, CoreAudio, CoreMIDI, AudioUnits, QuickTime, MIDI, ASIO, VST Audio Plug-Ins, Carbon Porting (CodeWarrior, PowerPlant)

Windows Application Development

Win32, MFC, Visual C++, CodeWarrior

Programming Languages

C/C++, Objective-C, Forth, Pascal, BASIC, Fortran

Cross-Platform Development, Porting, File Conversion

Sound Design, Editing, and Music Composition

EMPLOYMENT

GVOX <gvox.com> [8/05 - present]

Senior Software Engineer. Solely responsible for cross-platform (Win32 and Mac OS X) development, maintenance, and migration to modern technologies for the *Encore* and *MusicTime Deluxe* music notation programs and the *Master Tracks Pro* MIDI sequencer. Duties also included coordinating beta testing team, customer support, and supervising contract programmers.

Arboretum Systems <arboretum.com> [5/05 & 10/99 - 1/00]

Ported the company's *RayGunPro* and *Ionizer* noise remover plug-ins to MacOSX AudioUnits. Designed and implemented a software synthesizer for the multimedia editing application, *HyperEngine-AV*. This infinitely polyphonic/polytimbral synth was written in C++ and featured MIDI control, band-limited oscillators, LFO, ADSR, filters with resonance control, user-selected samples, a user interface with real-time display, patch routing, and the ability to save patch files.

Bias <bias-inc.com> [9/04 - 2/05]

Development contract to perform various improvements and feature implementations for one of the company's major professional digital audio products. Duties included, 24-bit and 32-bit support, audio file conversion and playback upgrades, various GUI bug fixes due to Carbon porting, drag and drop support, and evaluation of AudioUnit implementation.

Cycling74 <cycling74.com> [9/01 - 7/04]

Implemented CoreAudio drivers for the OS X version of Max/MSP. Designed and implemented *Soundflower*, a kernel extension that allows low-latency audio to be transmitted from any application to another. [Named a top new technology "certified hit" of the 2004 Winter NAMM show by *MIX Magazine*.] Created *csound~*, a Max/MSP object interface to Csound.

Muscle Fish <musclefish.com> [4/03]

Macintosh audio consultant to implement CoreAudio support in a CFM application. Created a soundfile playback and looping routines.

Blue Spike <bluespike.com> [4/99 - 2/01]

Digital watermarking development in C++ and fully cross-platform. Major projects included: design and implementation of an audio fingerprinting scheme to identify and reconstruct sound files that had been edited after watermarking; design and implementation of a compression scheme for watermark data; implementation of video file parsing with Quicktime for watermark preparation; and implementation of MP3 and AIFF file handling.

ShadeTree, Inc. <shadetreinc.com> [5/97 - 7/98]

One of three programmers for this software consulting company. Major projects included: *ScriptThing* - a Macintosh [powerplant] port from Windows of the full-featured commercial text editor for writing scripts and screenplays; a Macintosh [powerplant] application that captured, displayed, and processed hand signatures using a WACOM graphics tablet; and *tExtraction* - an Adobe Acrobat plugin for Macintosh and Windows to intelligently extract text from a PDF file.

Center for Contemporary Music <mills.edu> [6/96 - 8/96]

Development/Research Grant to encapsulate Digidesign Audio Hardware and OMS MIDI Driver API inside the Forth based Macintosh music application, *HMSL*.

SOFTWARE

<SONOMATICS.COM>

MacCsound <csounds.com/matt> [1996-present]

Supporter and developer for the Macintosh port of the ubiquitous digital synthesis and signal processing application. Originally developed by Barry Vercoe [MIT Media Lab], the latest version of MacCsound includes a front-end interface written in PowerPlant running on Classic and OS X. It includes CoreAudio and CoreMIDI support, user editable GUI control/display objects, a text editor with syntax highlighting, multi-processing support, and allows simultaneous rendering by loading the Csound Kernel as a shared library. This version has become the standard for musicians world-wide and has been featured in *Keyboard Magazine*, *Electronic Musician(x4)*, and two penned articles in *The Csound Book* [MIT Press]. Winner of ***Electronic Musician Magazine's 2004 Editor's Choice Award***.

Fielder [1999-2001]

Real-time audio application for MacOS [powerplant] and MacOS X [cocoa] that visually displays the surround-sound and stereo sound-field of file playback [sound manager and ASIO] and real-time input. A version also exists as an *iTunes* visual plugin.

Invalid Sync [1999-2001]

A BeOS performance instrument/composition written in C++ that automatically finds and extracts sound events from large files. The performer triggers these events and manipulates them from the computer keyboard.

Imager [2000]

A VST plugin to manipulate an audio stream's stereo image [rotation and zoom].

Fork [1999]

A digital tuner for MacOS [powerplant] and BeOS [C++] that includes a visual display of real-time pitch analysis. Output features include pitch correction and reference tones.

CLAIRE [1995-1999]

A real-time, virtual improviser that interacts with a human instrumentalist, written in Forth/HMSL.

EDUCATION

Master of Arts Mills College, Oakland, CA [1996]

Alumnae Scholarship | Heller Scholarship | Carruthers Scholarship | TA: Computer Music
Relevant Course Work: C, Macintosh Programming, Computer Graphics, Computer Music

Bachelor of Music University of Texas at Austin [1994]

Dean's List | Golden Key National Honor Society | Tuition Waiver Scholarship
Relevant Course Work: C, Fortran, Calculus, Linear Algebra, Computer Music

Applications, References and Code Samples available on request