

GABRIEL M. BEDDINGFIELD

609 W OAK ST — WYLIE, TX 75098
MOBILE (214) 516-9170 — E-MAIL GABRBEDD@GMAIL.COM

PROFESSIONAL SUMMARY

I am a flexible software engineer with proven experience in real-time, audio, multi-threaded, mobile, and Linux applications.

WORK HISTORY

Trinity Audio Group [Lead OS Developer, 2010-Present]

<http://www.indamixx.com/>

Indamixx is a custom Linux OS for Pro Audio work. It is based on Ubuntu and distributed via netbooks, laptops, USB sticks, and digital downloads.

Achievements

- Bootstrapped transition to MeeGo including hardware adaptations, private repository maintenance, and beta program.
- Backported kernel, libdrm, and Xorg drivers to Ubuntu/Jaunty to support the new Intel Atom N450 Pineview processors.
- Implemented a secured apt repository, complete with archive key signing.

Technologies: Debian Packaging, Bash Scripting, Apt, Git, pbuilder, GPG, and every developer and debugger skill I can conjure up.

Stretchplayer (audio player) [Lead Developer, 2010-Present]

<http://www.teuton.org/~gabriel/stretchplayer/>

Stretchplayer is a small media player that allows you to change the tempo of a song without changing its pitch, but also allows you to transpose the key of the song.

Achievements

- From zero to first release in 1 week.
- Fully-scalable, custom UI with mobile devices/touch screens in mind.

Technologies: Qt 4, Custom Widgets, JACK, DSP, librubberband, threads, CMake

Composite (live sequencer and library) [Lead Dev., 2009-Present]

<http://gabe.is-a-geek.org/composite/>

Composite is currently an audio plugin (LV2) that provides a drum sampler. It uses drumkits compatible with Hydrogen. In the future, Composite will be a live sequencer with an emphasis on loop-based live music performance and composition. It used the Hydrogen code base as a starting point.

Achievements

- Solved Qt bug where thread-local storage not being cleaned up when Qt's library is unloaded by dlclose(3).
- Solved bug in zynjacku (Python with C modules) where GTK+ and Qt had a clash over the Glib event loop.

Technologies: JACK, MIDI, LV2, C++, Qt 4, threads, DSP, CMake, CTest, boost

Hydrogen (drum machine) [DSP/Audio Developer, 2008-2010]

<http://hydrogen-music.org/>

Hydrogen is a virtual drum machine.

Achievements

- Solved tricky, multi-threaded, real-time DSP bugs in Hydrogen leading to the 0.9.4 release.
- Implemented Docbook/XML/POXML translation solution for the user manuals.

Technologies: JACK, ALSA, PortAudio, PortMidi, C++, Qt 4, POSIX threads, DSP, scon, qmake

jack_midi_clock [Lead Developer, 2009]

http://www.teuton.org/~gabriel/jack_midi_clock/

This is a small utility that simply follows the JACK transport (which manages where you are in a song: bar, beat, tick, tempo) and sends out MIDI Clock pulses that reflect the tempo and beat. This is especially useful when you have a hardware synthesizer/keyboard with arpeggiators and oscillators that you wish to synchronize with the sequencer on your computer.

Technologies: JACK, MIDI, C++

InConcert [Lead Developer, 2008]

<http://www.teuton.org/~gabriel/InConcert/>

An alpha-level, unfinished project to create a live-performance tempo-sync. It takes tempo taps from the user and adjusts the JACK transport accordingly. This makes the sequencers follow the musicians (instead of the reverse). Planned to be annexed into Composite.

Technologies: JACK, C++, Qt4

The Little Budget Tool (lb) [Lead Developer, 2005]

<http://www.teuton.org/~gabriel/lb/>

A small utility for [GnuCash](#) that provides budget/spending feedback.

Technologies: C++, Qt 3, autotools/make

Stewart Systems [Plano TX, Mechanical Engineer, 2004-Present]

Stewart Systems (www.stewart-systems.com) manufactures conveyors and equipment for high-volume bread and bun production (e.g. 1000

buns/minute). Customers include Flowers, Bimbo, and Sara Lee.

Achievements

- Saved 2,600 man-hours every year by writing a Google-like desktop application that fetches drawings automatically when given a part number. (C++, Qt, Sqlite, Python, and Reg. Expr.)
- Saved 350 man-hours every year by automating the creation of job-specific BOM's and engineering documentation. This also increased quality. (Excel, VBA, XML)
- Saved 600 man-hours every year by writing a script to check BOM's before release. (Python, COM, SQL, XML, XSLT, Access)

APW Wyott [Dallas TX, Project Engineer, 1999-2004]

APW Wyott (www.apwwyott.com) is a foodservice equipment manufacturer (toasters, holding drawers, etc). Customers include KFC, Taco Bell, Chili's.

Achievements

- Solved heating defects by programming a Finite Differences model. The program was then utilized to optimize the heat distribution. (C++)
- Increased departmental productivity with calculation forms for wiring, sheet metal bend allowances, and beam deflections. (Excel)

SASIB/Stewart Systems [Plano TX, Mech. Engineer, 1997-1999]

Same as Stewart Systems (above)

TECHNICAL COMPETENCIES

- Primary Languages: C++, C, Python, and SQL
- Toolkits: Qt, QtQuick/QML, Boost
- Other Languages: bash (grep/sed), MS COM (automation), PHP, VisualBasic, PL/pgSQL, Java, ladder logic (PLC)
- Multi-threaded and distributed applications: POSIX threads, Qt threads, client/server
- Build systems: make, autotools, qmake, scons, distcc
- Databases: PostgreSQL, Sqlite, MySQL, MS Access
- SCM tools: Git, Subversion, CVS
- XML: DocBook, XHTML, XSLT, XPath, CSS, DTD, Xalan, MSXML
- Administration: TCP/IP, Apache, SSH, NIS, NFS, Subversion, Git, CUPS
- Networking: Ethernet, Switches, Routers, packets, ports, firewalls, etc.
- Operating Systems: Debian, Ubuntu/Kubuntu, 64 Studio, Red Hat/Fedora, Knoppix, Windows XP, FreeBSD.

EDUCATION AND TRAINING

B.S. Mechanical Engineering, U. of Tennessee (Knoxville), 1997