

PHILIP ANDREW PHELPS

D.O.B: 14/03/1983

96 Downend Rd,
Horfield,
Bristol, BS7 9PN,
UK

T: +44 (0)7811 97 45 46
E: zenpho@zenpho.co.uk
W: <http://www.zenpho.co.uk>

RECENT UNDERGRADUATE STUDY

I have recently completed a BSc in Music Systems Engineering from the University of the West of England. The depth of both digital and analogue electronics, programming, and mathematics covered on MuSE completely complements my external interests since I often apply these fields to creative outlets; developing my own software to help my creative projects, modifying existing hardware to design new and exciting sounds.

Although focused on electronics, the multidisciplinary course provided me with practical experience in:

- DSP filter design (IIR and FIR filter design on the Texas 6711 DSK, programming in C, Matlab/Simulink)
- Analogue filter design (Passive RLC and op-amp based Sallen & Key prototypes)
- Acoustic treatment (Absorption in reverberation chambers, Sound transmission and isolation)
- Electrical engineering mathematics (PDEs, Laplace, Fourier, and Z Transforms, Eigen-vectors)
- Digital hardware design (ADC/DAC design, Combinational logic with gates, multiplexers, and PLAs)
- Analogue circuit design (Preamplifier and Push-Pull power amplifier design)
- MaxMSP development (Custom external object programming in C)
- "Traditional" audio engineering (Recording studio techniques, mixing & Foley for Film, TV, Radio)
- Software management techniques (ISO and SEI standards, software quality assurance)

OBJECTIVE

To research, develop, and expand my knowledge in the field of audio, electronics, and signal processing.

EDUCATION

2003-2007	University West of England, Bsc (Hons) Music Systems Engineering	1 st Class
2001-2003	City of Bristol College, BTEC Music Technology	Distinction
1995-2001	Filton High School, A-levels – Comp.Sci, Mathematics, and Physics	

RESEARCH INTERESTS

Japanese language and culture, Translation.

Audio experimentation, Electro-acoustic composition and recording, Electronics Engineering for audio.
Computer science, AI, Speech synthesis, data manipulation, encoding and compression.

PUBLISHED WORK

Zenpho/Zenpho Two albums (iTunes/MSN/AOL/CdBaby) – CDs documenting my love of literal sound design
One hundred ambient tones album (Archive.org) – Transistor shot noise and audio signals from solar panels!
This collection of unique and strange noises (collected or generated by equally strange methods) serves to demonstrate my fascination for new audio experiences.

Gkino Bfnak/Reverb Drones (Youtube/Vimeo) - I enjoy syncing unusual sounds to unusual video. All aspects of the production (including video editing, but especially sound design) were carried out by myself.

PROJECTS, EMPLOYMENT & SKILLS

2008-2009 **Speech recognition research, Lead developer**

This ongoing UWE-funded research project aims to improve access to lecture content for hearing-impaired users by a fully searchable database of text transcripts from audio and video recordings of lectures. By breaking the spoken audio into "paragraph" sections before using speech recognition technology to automate the first-draft of a transcription, end-users are able to search for keywords and jump immediately to the relevant section in the audio recording. Working on this project has involved writing various middle-ware code (in C, Java, PHP, Shell scripting, etc) for Linux, Windows, and Apple OsX.

2007-2009 **Visiting lecturer at the University of the West of England**

Since October 2007 I have been involved with teaching C Programming and MaxMSP to first year students. This involves working in a computer laboratory with students on a one-to-one basis, guiding them through exercises set by the module leaders. I've found teaching to be a delicate task: One problem is how to guide students around problems without directly revealing the answers in such a way as to encourage students learning for themselves. I enjoy passing on knowledge and sharing understanding. It is a great feeling to watch a group of students go from zero to actively tackling problems in unique and inventive ways using the knowledge you've passed on.

2007-2008 **Electronics service engineer for Global Design Solutions**

I was employed on a part time basis by GDS from August 2007 to January 2008. My job involved diagnosis and repair of faults in various devices used in the Theatre industry such as Martin MiniMAC moving lights, mixing desks, loudspeakers, cd players, servicing I was also part of an assembly team responsible for populating PCBs with components, soldering, and inserting the finished boards (along with various connectors and switches) into a number of GDS designed products such as winch motor control systems and lighting controllers.

2007 **Final Year Project – “A modern implementation of chiptune synthesis”**

As part of my degree, I produced a MIDI controlled synthesiser enabling extremely precise sound design for composing authentic “chiptune” video game music similar to that produced by 80s/90s home computer sound chips such as the AY-3-8910, YM2149, SID-6581. The project was awarded “Best Music Engineering Project 2007” at the UWE graduate show. I developed the project in the MaxMSP graphical programming environment with custom object code written in C. A formal report documenting the design, construction, and testing of all components is available here <http://www.zenpho.co.uk/PhillPhelps-ChiptuneSynthesis.pdf>

2007 **Flash developer (Audio/Actionscript) – “Interactive Research at UWE”**

As part of my degree, one module involved designing a series of flash presentations that summarised the work of several postgraduate research projects. My role (as part of a team involving three other students) focused on the Audio side of things: Recording and editing several interviews and voiceovers used in the presentation, writing background music for the various sections, and developing ActionScript to fade music during voice-overs. The project was awarded “Best Multimedia Project 2007” at the UWE graduate show and was showcased on the UWE website (mirrored at <http://www.zenpho.co.uk/intresearch/>).

2005-2008 **Conference recording engineer for EPTP**

Since 2005, I have been involved with arranging the recording of five-day spiritual psychology conferences at Emmaus House in Clifton, Bristol. This involves the live mixing of several radio microphones to record guided meditations, interviews, group exercises and discussions. These recordings are edited on the fly to form a set sold on the last day of each conference. This strict deadline involved extremely rapid editing and mastering of over 20 hours of audio. 30 sets of 17 full length (74minute) CDs were duplicated on a self-built duplication tower and hand-delivered to the EPTP headquarters in London.

2001-2007 **Audio experiments and Circuit-bending**

A favourite hobby of mine is to “circuitbend” (alter or augment the internal circuitry of) audio electronics to aid my experiments in sound and to further my understanding of electronics. I have modified VHS video and audio cassette recorders to take advantage of magnetic tape saturation and to help me understand magnetic hysteresis. My experimentation is not limited to analogue electronics, I have developed several DSP sound-mangling algorithms in graphical programming languages such as PureData and MaxMSP.

2005 **One Last Jam**

In the summer of 2005 I organised a free jazz session with over 13 musicians recorded as one non-stop 2 hour “in-the-moment” collaboration. I liked the idea of “composing with people” – bringing together a group of musicians with unique talents, bouncing ideas off of each other in a musically exciting way. I carefully designed a studio configuration where someone was assigned to “play” the mixing desk as an instrument using aux sends connected to chains of rack effects units and guitar pedals in feedback loops.

2004 **Composer for THE ENGINE ROOM**

In mid-2004 I was asked by The Engine Room, a Somerset based film production house, to produce music for a promotional video for the Carr-Gomm charity. Working as a hired composer in this environment meant that I was required to work a strict deadline. The project was entitled “Our Lives” and has since been shown on The Community TV Channel. (Sky 539, Virgin 233, Freeview 87)

2002 **Assistant network administrator for Filton High School with COMTEK**

During the summer of 2002, I was hired by my 6th form and secondary school to help manage the IT department. I was responsible for drawing up the specifications for the rollout of ~1,200 machines in co-operation with COMTEK Network Systems, actively upgrading and supervising the installation of new network hubs, switches, and cabling. I quickly gained experience in backup storage practices, transparent proxies, packet filtering and client-side tamper proofing due to the strict deadlines (I.E. the start of term!)

1994-2009 **Freelance computer configuration, diagnostics and installation**

I design, build and install (in both a physical and software sense) custom (quiet operation) machines for home and project recording studios. I have a wide knowledge of the history of IBM PC configurations and the fast pace of development of hardware standards and interface technologies. I help diagnose home networking problems, and evaluate WIFI security on a freelance basis.

REFERENCES

Stephen Allen U.W.E, CEMS Faculty, University of the West of England, Bristol, BS16 1QY, UK
Paul Cowan 6 Pensioners Court, The Charterhouse London, EC1M 6AU, UK

SUMMARY OF TECHNOLOGY SKILLS

Operating Systems & System Administration – I have experience with AmigaOS, FreeBSD (FreeNAS distribution), Linux (Debian/Dynebolic distributions), Windows (3.11,95-98SE,NT,2000-XP) and MacOS (8,9,X). I diagnose networking problems, and build custom machines on a freelance basis.

Programming Languages – I have programmed in Perl, PHP, HTML, C/C++, Pascal. I have developed custom objects in C for Cycling'74 MaxMSP. I am a visiting lecturer at UWE, teaching C programming.

Embedded DSP – I have developed simple applications in C for the Texas Instruments DSK 6711 range of DSP Processors using Matlab to derive filter coefficients.

Music Software – I use PureData (an open source version of Cycling 74's MaxMSP) to develop my ideas for chains of audio processes. I like aliasing, and I like the freedom software gives me to generate new unpredictable aliasing effects as a direct result of chaining processes together.

I use AdlibTracker to drive Yamaha OPL2/3 FM synthesis chips on old Soundblaster 1 soundcards, Octamed on the Amiga to generate "synthetic scripts" or wavetable sequences, and Jaytrax, that allows each wavetable to feedback and modulate the values inside other tables.

I have grown up using Steinberg Cubase to sequence and organise my ideas since version 4 but I have used Emagic Logic from version 5 onwards at CoBC and most recently version 8 at UWE.

I have used Digidesign Protools, to sequence and edit audio. I use Propellerheads Reason (since v1 onwards), and regularly use Syntrillium Cool-Edit pro as a waveform editor.

Multimedia development - I have used also Macromedia/Adobe Flash (5/MX/8) and Director (8/8.5/MX). Recently I have used Flash to develop an interactive presentation of the wide variety of postgraduate research that takes place at UWE.