

Objective

To be a software engineer concentrating on digital signal processing field.

Education

- **University of California, Santa Barbara** **2006~Now**
M.S. in Media, Art, and Technology (MAT)
GPA- 3.95 / 4.0
- **Stanford University** **2005~2006**
M.A. in Music, Science, and Technology
Center for Computer Research in Music and Acoustics (CCRMA)
GPA- 3.79 / 4.0
- **National Cheng Kung University** **1999~2003**
B.S. in Computer Science and Information Engineering
GPA- 3.5 / 4.0

Work Experience

- [Euphonix](#) **2007~2008**
Software Engineer
 - ✧ Implemented a C++ program to analyze the incoming audio signal to verify that the EQ and filters operate at the correct frequencies at all sample rates.
 - ✧ Used Java, Python, PHP and MySQL to develop the web pages to display and allow access to build and test results of various digital audio systems.
- Frank Urban and Associates, Ltd. **2006~2007**
Consultant & Programmer
 - ✧ Designed an algorithm for bass drum signal extraction and synthesis. Prototyped in Matlab, ported to C++.
- [Audio Impressions](#) **2006~2007**
Software Engineer
 - ✧ Implemented a system whereby various spot and room microphones are simulated and individual incoming audio sources are positioned in a virtual performing environment along with those virtual microphones.
 - ✧ Designed a MIDI Pattern Sequencer using MFC based on multithread programming.
- Information Management Center, Infantry Training Institute of R.O.C. Army **2003~2005**
Network Administrator (Lieutenant)
- Studio of Computer Research on Music and Multimedia Laboratory, Dept. of CSIE, National Cheng Kung University **2001~2003**
Research Assistant
 - ✧ Research topics: Digital Signal Processing · MPEG-4 Structured Audio · Musical Instrument Digital Interface (MIDI) · Synthetic music Mobile Application Format (SMAF).

Publication

- Earl Vickers, **Jian-Lung Wu**, Praveen Gobichettipalayam Krishnan, and Ravirala Narayana Karthik Sadanandam, "[Frequency Domain Artificial Reverberation using Spectral Magnitude Decay](#)" presented at the *Audio Engineering Society 121st Convention, San Francisco, October 2006* **2006**
- Yi-Song Siao, Alvin W.Y. Su, Jia-Lin Yeh and **Jian-Lung Wu**, "[A Structured Audio System Based on JAVAOL](#)" accepted and published in Workshop on Computer Music and Audio Technology, Taiwan, 2005 **2005**
- Alvin W.Y. Su, Yi-Song Xiao, Jia-Lin Yeh and **Jian-Lung Wu**, "[Real-Time Internet MPEG-4 SA Player and the Streaming Engine](#)" presented at the *Audio Engineering Society 116th Convention, Berlin, May 2004* **2004**

Projects

- Guitar decomposition and resynthesis. (ongoing)
 - ✧ The goal is to use frequency domain processing to decompose a guitar signal into separate streams, perform various modifications to make it sound like other types of guitars or other stringed instruments, and convert back to a composite audio signal.
- Implemented the algorithm for [Guitar Chord Detection](#) based on spectral analysis.
- Designed an algorithm for [Guitar Pitch Detection](#).
- [Synthesized Guitar Sound](#) using Physical Modeling.
- Implemented [Phase Vocoder](#) for time-stretching and pitch-shifting.
- Frequency Domain Artificial Reverberation using [Spectral Magnitude Decay](#). (**Patent pending**)
- Isolated word recognizer
 - ✧ The Viterbi algorithm is used for finding the most likely sequence of hidden states in the Hidden Markov Model used for word recognition.
- [Blind Shot](#)
 - ✧ Contributed to creating multi-channel surrounding sound using Vector Base Amplitude Panning (VBAP).
- Created VST plug-in for [Compressor](#), [Reverberation](#), and [Distortion](#).
- Converted [Synthesis ToolKit \(STK\) classes to Pure Data \(PD\) patches](#).
- Developed a [Structured Audio System](#) based on [JAVAOL](#).
- Created a [real-time Internet MPEG-4 SA player and a streaming engine](#).

Technical Skills

- Experienced in C++ **Object-Oriented Programming**
- Extensive experience in MFC, C, JAVA, Matlab, [Virtual Studio Technology \(VST\)](#), [Synthesis ToolKit \(STK\)](#), [Pure Data \(PD\)](#)
- Experience in **Assembly Language (Intel 8051)**, Python, [Jules' Utility Class Extensions \(Juce\)](#)
- Working knowledge in **Digital Audio Effect, Filter Design, Physical Modeling, Music Information Retrieval, Psychoacoustic, and Human Computer Interaction (HCI)**

Awards and Honors

- **Scholarship from Audio Engineering Society Educational Foundation** 2006~2008
- Undergraduate project was entered in the semifinals of the Communication and Technology Contest held by Ministry of Education in Taiwan 2003
- Undergraduate project was ranked second in the C.S. department 2003

Extracurricular Activities

- E-Commerce officer of **Audio Engineering Society (AES) Stanford Group** 2005~2006
- Third Prize of Chinese Chess Contest held by National Cheng Kung University 2002
- Instructor of Guitar Club in National Cheng Kung University 2000~2001