Yinyi Guo

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OBJECTIVE:

Full time position focusing on Digital Signal Processing and Software Programming

EDUCATION

2009- 2010 Master of Science, Electrical Engineering, **Stanford University**

2008- 2009 Master of Science and Technology at the **Center for Computer Research in Music and Acoustics (CCRMA), Stanford University. (Advisor: Julius O. Smith III)**

2004-2008 Bachelor of Science, Electrical Engineering, **Beijing Institute of Technology, China**

PROJECTS AT STANFORD:

2009 **Real-Time Audio Stream Analyzer and Classifier** (In Progress)
Implement an intelligent classification system for features modeling, extraction and recognition of sound timbers and audio effects of distortion and reverberation based on perception, MIR and signal processing

2009 **Perceptual Audio Codec**
Developed a perceptual audio codec using MDCT, M/S stereo Coding and Huffman coding

2008 **Software Design and Implementation**
Developed a real-time audio system for pitch tracking and chord detection using RtAudio and OpenGL

Human Computer Interaction
Implemented a sensor and circuitry based Human-Computer guitar Interface as a Virtual Band

Sound Synthesis Algorithm Implementation in ChucK
Implemented the Karplus-Strong algorithm to synthesize electric guitar timbers with distortion and feedback

WORK EXPERIENCE

DSP Internship **Gracenote, Sony Corporation America, Emeryville, CA**

2009 Jun.-Sep. Implementation of Independent Components Analysis for Audio Source Separation System

- Improved the drum transcription algorithm by using K-NN method for audio sources classification
- Implemented the non-negative matrix factorization algorithm for blind source separation
- Improved the adaptive threshold for onset detection and proposed schemes to evaluate the accuracy

ACADEMIC RESEARCH

Bachelor Thesis **Classification and Analysis of Music Mood with Fuzzy Theory and Probability Model**

2008 Ericsson Center of Digital Communication Technology, Modern Communication Lab, BIT

- Extracted audio features in intensity, rhythm and melody layers based on Thayer's cognition model
- Proposed a decision making method for music moods components analysis by integrating probability based GMM and distance based Fuzzy C- means theory
- Developed a HCI interface for analyzing and retrieving music moods information

Research Assistant **Improved Spectral Subtraction method in Speech Enhancement and Echo Cancellation**

2007 Signal and Image Signal Processing Laboratory, Beijing Institute of Technology, Beijing

- Improved the algorithm of spectral subtraction to reduce 'music noise' by adaptively adjusting the

sub-band subtraction factors with analysis of short-time SNR and amplitude-bandwidth

- Introduced Voice Activity Detector (VAD) and employed Bayes criteria to obtain soft decision information based on noise spectrum adaptation

HONORS AND AWARDS

2004-2008	Academic Excellent Student Scholarship, Beijing Institute of Technology
2004-2005	Outstanding Student Award, Beijing Institute of Technology
2008	Outstanding Undergraduate Student of Beijing Institute of Technology

EXTRACURRICULAR ACTIVITIES

2008-Present	Member of Audio Engineering Society at CCRMA, Stanford University
2007-Present	Student Member of Audio Engineering Society, US
2005-2008	Vice Chair of Badminton Association, Beijing Institute of Technology
2007-2008	Volunteer for the Beijing 2008 Olympic Games, Beijing
2004-2008	Commissary in charge of Sports and Art, Beijing Institute of Technology
Oct. 2007	Volunteer in UNICEF for child education development in western China, Beijing

COMPUTER SKILLS

Programming Language: C/C++, Python, Matlab, Octave, Chuck

Software: Pure Data, Audacity, Logic, PSPICE, System View, MAXPlus2, Adobe Audition, CCS

Operating System: Windows, Linux, MacOS