

ROSS PENNIMAN

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OBJECTIVE

Opportunities in research and development of digital audio technology.

OVERVIEW

- Programming experience in Matlab and C/C++.
- Developing and troubleshooting high-level DSP algorithms.
- Developing iOS apps, including audio processing and synthesis.
- Troubleshooting audio electronics, from individual components to highly complex systems.
- Commitment to producing detailed and organized documentation.
- Extensive experience on both Apple and Windows computer platforms.
- Extensive experience teaching others about audio and music technology.
- Recording engineering for a wide variety of music, from soloist to full orchestra.
- Active member of the Audio Engineering Society since 2005.
- Awarded the John Eargle Scholarship by the AES in 2012 and 2013.

EDUCATION

University of Miami Coral Gables, FL 2012 – 2014
M.S. Music Engineering Technology (expected)

Coursework: DSP, Acoustics, Audio Synthesis and Effects Programing, iOS Programming, Machine Learning.

Thesis (in-progress): *An Adaptive Approach to Decorrelation of Loudspeaker Signals*

University of Michigan (Highest Honors) Ann Arbor, MI 2000 - 2005

B.S. Sound Engineering, Principal teacher: Dr. Jason Corey

B.Mus. Music Technology, Principal teacher: Dr. Mary Simoni Cello Principal: Erling Bengtsson

Coursework: DSP, Programming, Analog Circuits, Acoustics, Electromagnetics, Sound Recording, Timbral Ear Training, Music Theory, Composition, Music History, University Orchestra (Cello).

EMPLOYMENT

Teaching Asst., University of Miami Coral Gables, FL 2013 – Present
Develop materials for, and teach laboratory classes of Digital Audio I. Curriculum includes basics of digital audio, FIR and IIR filters, plucked string models, convolution and the FFT.

Research Intern, Fraunhofer IIS Erlangen, Germany Summer 2013
Added features to 3D reverberation algorithm in Matlab with GUI control. Gave consultation on procedures for measuring latency, SNR, and distortion in a digital audio system.

Studio Manager, University of Miami Coral Gables, FL 2012 – 2013
Administered technical and logistical operation of recording studio with Avid System 5 console. Managed 3 student employees. Maintained equipment. Recommended new purchases.

Engineer, Automated Processes Inc. Jessup, MD 2006 – 2012
Developed and verified new products. PCB layout in Altium Designer. Programmed automated test procedures in Visual Basic for Audio Precision and Prism Sound equipment. Produced schematics and other documentation for end users, technicians, and manufacturing. Custom assembly, testing, and repair of large-format analog mixing consoles. Trained end-users in console operation.

(see reverse side for projects and descriptions)

PROJECTS

“Rotary Circus” a VST plug-in that simulates a Leslie rotating speaker (C++).

- Submitted to the 2013 AES Student Design Competition
- Extensively customizable with many adjustable parameters
- Automatically controlled acceleration and deceleration

“CellOndes” an iPad instrument app inspired by the Ondes Martenot (Objective C/ C++)

- Real-time audio synthesis
- Interactive GUI with animation
- Expressive control of pitch, loudness and timbre

"STREZO" an algorithm for simulating sympathetic string vibration as a reverberation effect.

- Implemented as a GUI in Matlab
- Adjustable number, pitches, and tuning of simulated strings

Programmed real time audio effects processor based on the **Texas Instruments C5510 DSP chip**.

- Led group of 5 students
- Fixed-point DSP programming in C
- Implemented reverb, chorus/flange, vibrato, tremolo and other effects

“Stereo Position Simulator” a VST plug-in that simulates the stereo imaging of microphones.

- Uses level and time differences to simulate stereo position
- Can mimick the characteristics of an arbitrary, user-defined stereo pair of microphones
- Submitted to the 2005 AES Student Design Competition

Analyzed acoustics of a 3400 seat concert hall **using digital recordings**.

- Group project including oral presentation and written report
- Estimated reverberation time theoretically using Sabine equation
- Measured reverberation time experimentally using recorded impulse responses

Recorded full orchestra live in 5 channel **surround sound**.

- Led team of 3 people
- Used 15 microphones (DPA, Schoeps, and Neumann)

Researched the compressive effects of **room acoustics** on recorded dynamic range.

- Individual research project
- Developed custom signal analysis tools in Matlab