

Jonathan J. Michelson

Pittsburgh, PA | jmichels@andrew.cmu.edu | www.jonathanmichelson.com

EDUCATION

Carnegie Mellon University

M.S. - Music and Technology

Thesis: Unsupervised Guitar Tablature Transcription

GPA: 3.60/4.0

Pittsburgh, PA
Expected May 2017

Binghamton University, State University of New York

B.S. - Electrical Engineering

GPA: 3.60/4.0 | Cum Laude

Selected Coursework: Machine Learning, DSP, Data Compression, Sound Recording/Editing/Mastering

Binghamton, NY
May 2015

SKILLS

Programming/scripting: Fluent: {Matlab}; Conversational: {Python, C/C++}; Tourist: {bash, HTML, CSS, JUCE}

Software Tools: git, LaTeX, Logic, Pro Tools, MS Office

RESEARCH AND PROFESSIONAL EXPERIENCE

Bose Corporation

Applied Research Intern, Automotive Systems Division

- Designed novel psychoacoustic experiments in Matlab/Simulink

- Deployed experiments with bash-, Nodejs-, and MongoDB-based tools, gathered 20 hours of critical listening data

- Analyzed and presented results, which augmented binaural perception understanding

National Institute of Standards and Technology (NIST)

Summer Undergraduate Research Fellow

- Developed COMSOL models to simulate scanning microwave microscope (SMM) response for subsurface ICs

- Presented simulation results, which contributed to 2015 ICMTS paper, to audience of 60 at end-of-summer symposium

- Compiled work for adoption by next summer's intern, whose simulations further corroborated experiments

Framingham, MA
Sep.-Dec. 2016

Gaithersburg, MD
Jun.-Aug. 2014

PROJECTS

Beatbox Recognition System - Pittsburgh, PA

- Created Matlab system that synthesized drum sequences from simple beatboxing audio excerpts

- Achieved excellent WER (0.0092) with design that included onset detection and LPC-based discrimination filters

Convolution Reverb Unit - Binghamton, NY

- Collaborated with 3 other students on capstone design of efficient audio convolution reverb unit

- Spearheaded overlap-save-based algorithm development in Matlab

Guitar Tube Amp Build - Binghamton, NY

- Researched vacuum tube amp design; modeled augmented schematic using SPICE; hand-wired completed build

Aug.-Sep. 2015

Jan.-May 2015

Jan.-May 2015

LEADERSHIP

Teaching Assistant: Intro to ECE - Pittsburgh, PA

- Instructed 30 undergrads in fundamentals course during weekly recitation sections, lab sessions, appointments, etc.

- Average student feedback score for TA quality: 4.6/5.0 (feedback form: <https://goo.gl/4ikAeJ>)

Musical Worship Leader - Binghamton, NY

- Led 15-minute reverent musical portions of weekly Christian Fellowship meetings attended by 100+ students

- Coordinated rehearsals and transportation logistics for band of 11 peers; oversaw team's technical and spiritual growth

Aug. 2015-May 2016

Aug. 2012-May 2013

ADDITIONAL

Home Studio - Arranged/recorded/produced revenue-earning music in pastime: <https://goo.gl/69I2az>

Backup Server - Automated family computers' backups to remote RaspberryPi cloud: port-forwarding, DDNS, rsync, ssh