

Jonathan J. Michelson

Brooklyn, NY | jon.michelson93@gmail.com | www.jonathanmichelson.com

EDUCATION

Carnegie Mellon University | Pittsburgh, PA Aug. 2015 - Aug. 2017

M.S. Music and Technology | GPA: 3.70/4.00

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

Binghamton University, State University of New York | Binghamton, NY

Aug. 2011 - May 2015

B.S. Electrical Engineering | Cum Laude

SKILLS

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

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

PROFESSIONAL EXPERIENCE

Electro-Harmonix / New Sensor Corporation | Queens, NY

Aug. 2017 - Present

DSP Engineer

- Award-winning *Oceans II*: real-time reverbs and multi-FX; analog spring IR emulation; fixed-point Blackfin target
- Modernized and versioned 100,000 lines of company code with Git; maintenance of batch, C, Matlab DSP utilities
- Assist project lifecycle: market research, development, UX, testing, production, revision, customer service

Bose Corporation | Framingham, MA

Sep. - Dec. 2016

Applied Research Intern

- Designed psychoacoustic tests using Matlab/Simulink; augmented binaural tech for automotive clients: Mazda, Nissan
- Deployed experiments with bash-, Nodejs-, and MongoDB-based tools; gathered & analyzed 20 hours of listening data

IBM | East Fishkill, NY

Jun. - Aug. 2015

Verification Engineering Intern

- Ran UVM simulations of a VHDL ALU, discovered arithmetic bugs which led to ALU alterations by logic designer
-

RESEARCH

J. Michelson, R. Stern, and T. Sullivan. "Automatic guitar tablature transcription from audio using inharmonicity regression and bayesian classification". In *Audio Engineering Society Convention 145*, Oct 2018 (accepted).

L. You, J. J. Ahn, E. Hitz, **J. Michelson**, Y. Obeng and J. Kopanski, "Electromagnetic field test structure chip for back end of the line metrology," *Proceedings of the 2015 International Conference on Microelectronic Test Structures*, Tempe, AZ, 2015, pp. 235-239.

PROJECTS

Beatbox Recognition System | Pittsburgh, PA

Aug. - Sep. 2015

- Synthesized drum sequences from beatboxing audio excerpts: onset detection, LPC discrimination filters, WER = 0.0092

Guitar Tube Amp Build | Binghamton, NY

Jan. - May 2015

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

LEADERSHIP

Teaching Assistant: Intro to ECE | Pittsburgh, PA

Aug. 2015 - May 2016

- 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 (survey form: <https://goo.gl/4ikAeJ>)
-

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