

# DAVID RAMSAY

## 2011~2014, *Bose Corporation* 2010 *Systems/Electrical Engineer*

*2 years in Audio Applied Research as a Systems Engineer:*

-Design, construct, and tune complex audio prototypes for Home Entertainment applications. Current work focuses on advanced limiting schemes, equalization, speaker spatialization array topologies, and critical listening/evaluation skills.

-Designed, implemented, and tested a microphone array using self-implemented speech intelligibility standards; gained familiarity with audio measurement techniques and real-time processing. (*internship*)

*Selected for Highly Competitive PACE rotation program:*

-6 months in Noise Reduction Technology's Advanced Development Group. Designed and tested perceptually based noise management algorithms in Matlab, objective-C.

-6 months in Automotive Systems' Electrical Engineering Group. Tested board layouts and worked on embedded/analog circuit design.

## 2010-2011 *Fulbright Researcher* *Dublin Institute of Technology*

Developed and prototyped a DSP (SHARC) based system to allow handicapped musicians to play guitar using real-time feature extraction and pitch shifting; Matlab and C programming, Microchip/ADI hardware.

## 2009 *General Electric Co.* *Co-op at GE Energy*

## 2003-2008 *Nat'l Institutes of Health,* *U.S. Naval Research Lab* *Various Internships*

## *Skills and Interests*

Advanced signal processing, system design, acoustics, psychoacoustics, audio, web development, and hardware skills. Excellent with Matlab, C and Assembly ( $\mu$ C programming), Javascript, and Altium/Spice/analog circuits. Skills in Python, Objective-C, and Java/C++/OOP. Learning embedded Linux dev

Guitarist (college Jazz/Classical ensembles), college radio DJ, passion for recording/mixing & audio hardware. Currently in an active band. AES Member, gear-nut, and trained listener.

Current work/interests include distributed low-power sensing, RF, BLE, wearables, Supply Chain/Mfg, scalable hardware design, and behavior intervention tech for wellbeing/health. Driven towards entrepreneurship.

## *Education*

2014 – Present  
Master's Student

### **MIT Media Lab's Responsive Environments**

*(Sensors for Interactive Environments, IoT Workshop, Supply Chain and Manufacturing Bootcamp, Future of Music, New Enterprises, Nuts and Bolts of Entrepreneurship, Health Behavior Change, Tech Foundations, Metapiano.)*

2013  
Audio Measurements, Acoustics, and DSP Courses  
**Bose Corporation (internal)**

2012  
Professional Certificate in Music Production  
**Berklee Online School**

2005 – 2010  
B.S. in Electrical Engineering (conc. Signal Processing)  
B.A. in Music (conc. Guitar)  
Minor in Biomedical Engineering  
**Case Western Reserve University**

## *Publications*

- *A Novel Fourier Approach to Guitar String Separation.*
- *Base plate mechanics of the barnacle Balanus amphitrite*
- *GroupLoop: A Collaborative, Network-Enabled Audio Feedback Instrument*
- *Patent Pending for Bose Work*

## *Awards*

Case Trustee's & Alumni Ass'n Scholarships, Nat'l Merit Scholarship, Fulbright Scholarship, Who's Who Student