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Human Resources  
Bose Corporation  
Boston, MA

Dear Bose Human Resources:

Your job opportunity mentioned at Georgia Tech's campus career fair for an undergraduate Electrical Engineering intern with a focus on acoustics and signal processing interests me. With my knowledge of digital signal processing, extensive musical background, and communication skills, I can excel as an electrical engineering intern and serve Bose well.

I have acquired, through classes and undergraduate research, skills associated with the design and implementation of DSP concepts. I have simulated circuit designs and various filters with Cadence Spice, NI Multisim, as well as analyzed the circuits through protoboard implementation and testing with bench equipment. In addition to this knowledge base of circuit design, I have implemented various DSP functions in MATLAB. However, my interest in music ignited my passion to go beyond the scope of required course material to understand more about the correlation between DSP and sound. In undergraduate research, I have explored this curiosity by working on a project with DSP conversion of a four-channel filter component in the Buchla 200 Series Synthesizer, which is currently only available in analog. By implementing an advanced circuit of the DSP filter of this particular component in the synthesizer, I was able to apply theoretical concepts to real-world technical design. In complement with my knowledge and interest in signal processing, my extensive musical background allows for a unique array of skills with respect to music theory and technology. With an early start in violin performance at age 3 and piano at age 6, I have developed an appreciation and everlasting desire for tone clarity and elimination of noise in musical recordings. As a music minor, I have nurtured my musical endeavors through the study of both music theory and modern applications used to engineer sounds based on technical specifications. Through the use of music editing software, primarily Ableton Live, Max/MSP, and Reason, I have not only gained the ability to compose original works, but I have also been able to apply knowledge of filters to facilitate the generation of unique sounds in my recordings.

I have gained communication skills through the jobs I have held on campus, most notably through my work as a MATLAB Teaching Assistant. Throughout my four semesters of TA work thus far, I have taught weekly recitations, dedicated multiple office hours a week to help students with homework problems, and served constantly as an intermediate advocate for students in regards to homework and test grade disputes. I have also acted as a role model on a daily basis for peers through a year spent with Georgia Tech Housing as a freshman resident assistant. I not only was entrusted with the well-being of my residents, but I also was in charge of planning various social, academic, and diversity events which aided in their integration to college life. Through my work as a communications facilitator, many of my residents voluntarily chose to room again with one another the following year. Over time, my communications experience has become a strong complement to my growing array of technical skills.

After you have reviewed my resume for additional information on my qualifications and work experience, I will be happy to answer any questions you may have. Please contact me to discuss how my experience with DSP, musical background, and communication abilities may benefit Bose as an electrical engineering intern. I look forward to hearing from you.

Sincerely,  
Michael Lu