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Doppler Shift Human Detection Using a Microphone Array

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TOWARD A BETTER UNDERSTANDING OF...

DOPPLER SHIFT HUMAN DETECTION USING A MICROPHONE ARRAY

Michael J. Billington

Mentor: Arye Nehorai

The purpose of this project was to see if Doppler Shifting could be used to measure the real-time velocity of a person walking through a room. Some basic speakers were used to generate a sound, and a 16 microphone array was used to take in the reflected, Doppler Shifted signals. Once determined that this was feasible, the final goal was to set up a demonstration that could show the real-time velocity of a person walking within the effective radius of the speaker and microphone array over 180 degrees.