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# Rewind: A Music Transcription Method

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science
in Computer Science and Engineering.

by

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**Abstract:**

Music is commonly recorded, played, and shared through digital audio formats such as wav, mp3, and various others. These formats are easy to use, but they lack the symbolic information that musicians, bands, and other artists need to retrieve important information out of a given piece. There have been recent advances in the Music Information Retrieval (MIR) field for converting from a digital audio format to a symbolic format. This problem is called Music Transcription and the systems built to solve this problem are called Automatic Music Transcription (AMT) systems. The recent advances in the MIR field have yielded more accurate algorithms using different types of neural networks from deep learning and iterative approaches. Rewind's approach is similar but boasts a new method using an encoder-decoder network where the encoder and decoder both consist of a gated recurrent unit and a linear layer. The encoder layer of Rewind is a single layer autoencoder that captures the temporal dependencies of a song and produces a temporal encoding. In other words, Rewind is a web app that utilizes a deep learning method to allow users to transcribe, listen to, and see their music.

**3:00 pm, Thursday, April 28, 2016**

Scrugham Engineering and Mines (SEM) room 201

Committee: Dr. Fred Harris, Dr. Richard Kelley,
and Dr. Tomasz Kozubowski