Candidate Interest #3

Neural Networks for Describing Vivid Musical Memories and Feelings

The main way of communication throughout the human brain is through the use of neural networks. Neural networks are composed of neurons that have inner connected synapses that form a path of communication as information travels throughout the brain and body. Neural networks can than be modeled as artificial neural networks, where an individual's neural network is modeled using nodes in place of synapses to represent the process physically and for others to be able to understand the relationship from one node to another.

Have you ever been driving a car and all of a sudden a song you haven't heard in years comes on the radio? You remember listening to that song and having the time of your life on vacation with your friends and family years prior to hearing it now. Now all of a sudden while driving, you are able to recall those same feelings and memories vividly and at an instant. This is an experience that I have known to love and that I have been interested in since I way young. I've also had this experience in reverse, where a sad song reminds me off a troubling or rough patch in my past. These memories are as vivid and often even more vivid than any individual wants it to be.

This project will set out to understand just why after so many years humans can recall such vivid feelings and memories after hearing a certain song or melody. Through the use of neural networks the path of neurons used to establish these memories and the feelings can be followed and modeled as nodes, and the relationship between those nodes can be shown. In doing so, this project would allow for a more concrete understanding of neural networks and advance the current knowledge we have on the subject with regards to Cognitive Musicology.