Heretic | AI-Driven Improvisation Software | 2019-Present

Notes:
Heretic is an artificially intelligent computer music system to be used within the context of human-machine free improvisation. *Heretic* is written in the SuperCollider programming language with the machine learning aspects of the system implemented in Wekinator. The motivation behind *Heretic's* inception was to create an autonomous system that uses my own improvisational methodology as a computational and conceptual framework for machine improvisation. To achieve this, *Heretic's* architecture is divided into three interdependent modules: *Interpretive Listening, Contextual Decision Making*, and *Musical Synthesi*s. Each of these modules serves an important musical function for the spontaneous creation of novel improvised music. When working collectively, these modules are a complete computational model of my improvisational methodology that interacts with human improvisers in real-time. *Heretic* is trained on my approach to improvisation, but through its interactions with a human performer, *Heretic'*s own improvisational voice and modes of musical expression emerge.

Work Sample:
Heretic: Excerpt #1

Machine Listening Demo:
Machine Listening Video Demonstration

On the top-right corner of the screen in the above video, you will see a list of 10 improvisational "Language Types" accompanied by green sliders. These sliders are a visual representation of *Heretic's* ability to detect which language type I am playing in real-time. When I start, the sliders indicate "Silence" as I am not playing. As I begin to play short, staccato drum attacks, the sliders indicate "Sparse Formings." This process continues as I traverse all 10 language types in this video.

Further Listening:
Full Performance #1
Full Performance #2

Publications:
H.Brown, "Heretic: A New Live Algorithm", Dartmouth College Master's Thesis in Digital Musics (2019)

H.Brown and M.Casey, "Heretic: Modeling Anthony Braxton's Language Music", International Workshop on Multilayer Music Representation and Processing. IEEE. (2019)

Code:
Heretic - GitHub Repository