

Cognitive Information Processing Workshop Paper Outline

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Abstract

What is our core hypothesis? *People take in information when perceiving music. With it they continually build predictive models of what is going to happen. An information theoretic approach to music cognition is thus a fruitful avenue of research.*

0.1 Intro

0.1.1 Information Theory and prediction

Bayesian probability and modeling the building of predictions

0.1.2 Link to music

Music as a temporal pattern. Meyer, Narmour. Music unfolding in time. How listeners see different kinds of predictability in musical patterns..

0.2 Information Dynamics Approach

0.2.1 Re-iterate core hypothesis

0.2.2 models/parameters/observations

The grouping of elements into past, present and future...

0.2.3 Information measures

Predictive information rate as a measure of structure Crutchfield papers, anatomy of abt

0.2.4 Case of this approach being good at modelling music cognition

Inverted U

0.3 Applications

0.3.1 Information Dynamics as Design Tool

The Melody Triangle

What it is

As composition assistant

generation of non-sonic content *maybe?*

Boredom detector?

Musical Preference and Information Dynamics

Any results from this study

0.3.2 In Analysis

refer to the work with the analysis of minimalist pieces

Content analysis - Sound Categorisation. Using Information Dynamics it is possible to segment music. From there we can then use this to search large data sets. Determine musical structure for the purpose of playlist navigation and search. (Peter)

0.3.3 Beat Tracking

Bayesian belief can be used to predict when things happen (as oppose to just what happens). Information Dynamics of?

0.4 Conclusion