A Corpus-assisted Discourse Analysis of Chiptune-related Practices Discussed within Chipmusic.org

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Context

Problem and Motivation

Scholarship on the intersections of computer science education and music education explore a multitude of interdisciplinary connections such as performing music through live coding practices,[1,6,7,14,15,16,17,18,24,26] designing and building electronic music instruments,[2,5,8,11,22] and the intersections of computational thinking and music making.[9,10,13,23] Studies that explore these connections tend to focus on the intersections of isolated practices from computer science and music within a formalized educational space or through a particular platform. **While such examples demonstrate interdisciplinary connections between the two fields, they are often decontextualized from practices outside of formalized educational contexts or are contrived for academic purposes.** This study investigated 245,098 discussion forum posts within an informal, online space with a multitude of computer science and music practices. Findings from this study demonstrate the potential for transdisciplinary learning between computer science education and music education that merges computer science hardware and software practices with music making practices.

What are Chiptunes?

Chiptunes are electronic music compositions or performances either emulating the sounds of or created through early computer and video game sound chips.[3,4,12,19,20,21] People engage with chiptunes through a wide variety of practices: music performance, computer and video game hardware modifications, software modifications and computer programming, traditional Western European classical composition practices, music production, electrical engineering, and art production.[3,4,12,19,20,25,27] ***Note**: If you are unfamiliar with what chiptunes sound like, use the link on the bottom right corner to access two chiptune playlists.*

Design

Setting

- Chipmusic.org is a chiptune discussion forum with over **11,000 members** from around the world

Data

- **245,098 discussion forum posts** consisting of **10,892,645 words** written between December 30th, 2009 and November 13th, 2017

Corpus-assisted discourse analysis tools and techniques

- Corpus analysis techniques
  - Word lists
  - Lexical frequency analysis
  - Dispersion
  - Concordances
  - Collocation
  - Keyness
- Discourse analysis techniques
  - Significance
  - Practices
  - Politics
  - Connections

Scholarship that assisted with making sense of findings

- Chiptune scholarship
- Scholarship about the mod scene
- Maker culture scholarship
- Scholarship about online affinity spaces
- Discourse analyses

Ask Me About . . .

- Specific data analysis tools and techniques
- Affordances and constraints of scholarship related to this study
- My positionality related to this study
- Ethics of corpus-assisted discourse analysis

Maker Practices

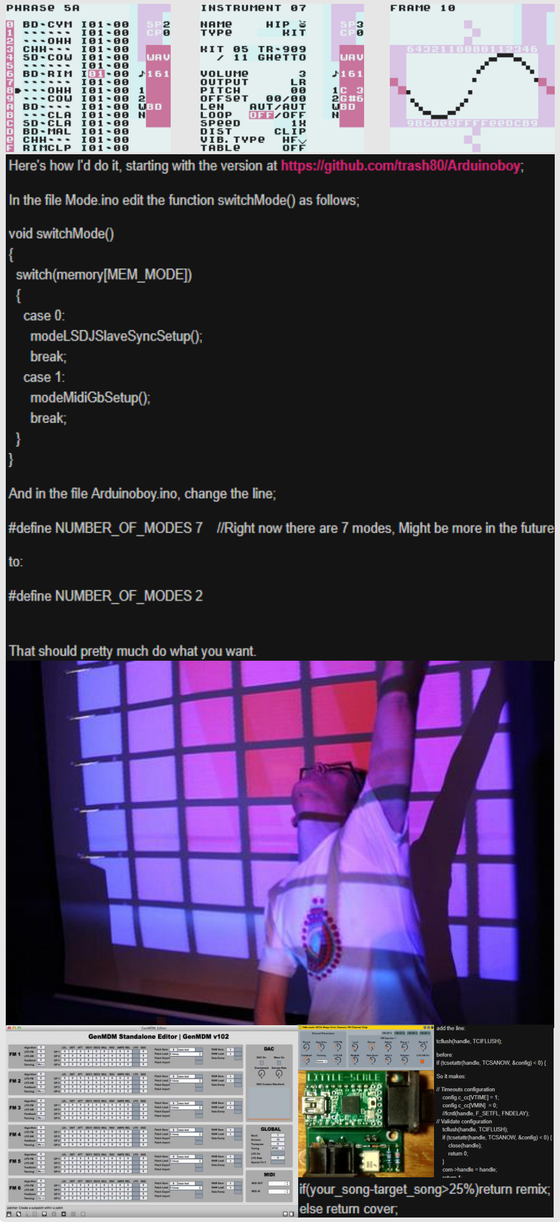
Ask Me About . . .

- Aesthetic mods
- Functionality mods
- Member perspectives on the relationship between mod practices and music making
- The role of experimentation in hardware modifications
- Member discussions on manufacturing and building new devices
- Why I refer to hardware practices as "maker practices"
- **One of the pictures below that piques your interest**

Coding Practices

Ask Me About . . .

- Soft modding practices
- How members use and discuss source code
- The range of collaboration within software development
- How members learn to code by modding or creating chiptune-related software
- Member perspectives on whether coding practices are relevant to music making and learning
- **One of the pictures below that piques your interest**



Transdisciplinarity?

Revealed Themes and Subthemes

Composition practices	Chiptune appropriations Sample-based producing, covering and arranging, remixing, mash-ups, and commenting and discussing Sound synthesis Reverse engineering Composition concepts and tools Western staff notation and music theory Fakebit
Performance practices	Using a Game Boy as a performing instrument Live performing Recording performances for streaming Performing with acoustic and electronic instruments Discourse on performance practices
Maker practices	Hard mods Aesthetic mods Functionality mods Electrical engineering practices Circuit-bending and soldering Perspectives on modding Learning how to mod Manufacturing or building new devices
Coding practices	Soft mods Source code Software development Learning how to code
Entrepreneurial practices	Promoting Selling, buying, and trading
Visual art practices	Pixel art Video mixing Databending
Community practices	Collective learning Constructive criticism Collaborating Competitive events Collective efficacy

Ask Me About . . .

- Implications of the themes and subthemes listed above
- Chiptunes as an exemplar of transdisciplinary engagement
- Chiptunes as interdiscipline
- Chiptunes and null curricula
- Potential collaborations between music and CS educators/researchers

Link to the Dissertation

The following QR code and link navigate to a webpage with this poster's abstract, a pdf of this poster (each picture links to the appropriate figure in the dissertation), two chiptune playlists, all citations referenced in this poster, and the published dissertation.

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