

# Musin'

## Knowledge-Sharing of Musicianship

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### Abstract:

We share a lot of music files on the Internet, but how do we share musical knowledge with each other? We imagine an online knowledge community where amateur and professional musicians from different traditions and cultures can co-create a model of musicianship within a set data structure, share information pertaining to music, and collectively reflect on what it means to be a musician. The model supports exploration of musicianship by providing different navigation paths: by general areas of musicianship, by specific skills, and by genre. By doing this we hope to encourage both novice and advance musicians to use this tool.

### Context:

**Musicianship is the set of interrelated cognitive skills that is being developed consciously and unconsciously as one learns a new instrument or new songs.** It has relevance to musicians all over the world, regardless of culture, history, musical forms and genres or level of experience. The different aspects of musicianship (such as rhythm) are not exclusive to the domain of music, but when put together, they map out the essence of what makes a musician, a musician.

### Objectives:

In an attempt to create a knowledge-sharing environment where amateur and advanced musicians can become engaged with the concept of musicianship, **we propose a model structure aiming to reflect different aspects of musicianship as a means to facilitate the sharing of musical knowledge between individuals.**

This overall objective leads to the following **goals** (and how Musin' attempts to address them):

- **Develop a basic data structure** for musicianship concepts from literature (taxonomy built from [1,2]).
- **Visually represent the data in a way that:**
  1. **Enables the automatic generation of models** as data is added to the taxonomy by the knowledge community (editable taxonomy; use of constant visual representation rules).
  2. **Facilitates the exploration and understanding** of the model (model is organized into four meaningful layers, with specific musicianship skills shown in relation to the wider model).
  3. **Is visually pleasing** (organic metaphor).

**Designing for emergence:** We view the design of a musicianship model and of an online environment in which to develop it as a design of a structure for growth rather than as a design of any specific content. A flexible data structure is one way to implement a bottom-up and iterative approach to the development of emerging knowledge [4].

**Forms & Pattern**  
DEFINITION: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam pulvinar, ligula vitae tempor iaculis, quam lacus bibendum lorem, nec ullamcorper sem massa a lectus. Nulla vitae massa neque, id rhoncus quam. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Morbi sodales, turpis nec vulpate volutpat, sapien odio gravida tortor, eget tempor magna est id nibh. Quisque auctor dolor quis sem consectetur egestas. Suspendisse ac leo eu risus tristique cursus lobortis et sem. Donec tincidunt, purus id vestibulum tincidunt, justo lorem placerat mi, vel pharetra enim lectus et lacus.

**Resources**  
- Online rhythm tutorial: [http://...](#)  
- Great book on learning rhythm: [Rhythm for smart musicians](#)  
- Online audio recordings of percussion exercises: [http://...](#)

**Discussion forum**  
June 01, 2009 (Nick) - **Check this out!** There's a great guitar show coming to Toronto. Anyone wanting to improve their rhythmic...  
June 03, 2009 (Laura) - **I'm not sure about the definition of rhythm** as a basic performance skills given here. I didn't change it yet...

**Transformational reasoning:** Playing with and creating external visual models can help elicit and develop mental models, facilitating problem-solving and learning [3]. This emphasizes the importance of modeling as an activity rather than of models as objects.

**Taxonomy**

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**Design heuristics from research on visual processing:** With time, the model of musicianship will likely become bigger and more complex. This can make its navigation difficult and become an obstacle to its understanding. Turning to research on visual processing from the field of cognitive psychology can help address this challenge in a number of ways. Firstly, research on how to reduce the cognitive load on users' visual working memory point to navigation strategies such as dividing the model into meaningful chunks, with chunks shown in relation to the wider model [5, 6]. Secondly, research explaining how we query and process visual information help understand how to use such design tools as color, form and space in order to help model users identify and process meaningful patterns [7]. Finally, research on humans' emotional response to visual artifacts emphasizes the importance of designing visually pleasant models [8].

### Concepts informing our artifact:

Our artifact embeds a number of concepts gleaned through the Visual Thinking seminar. Together, these concepts act as the conceptual framework framing our design process.

- Transformational reasoning
- Designing for emergence
- Social construction of knowledge
- Design heuristics from research on visual processing

**MUSICIANSHIP SKILLS**  
- pitch / frequency  
- intonation  
- timbre  
- phrasing  
- dynamics  
- rhythm  
- meter  
- ...

**MUSICIANSHIP AREAS**  
- Cultural Context of Music  
- Active Listening  
- Form & Pattern Recognition  
- Basic Performance Skills  
- ...

**GENRE**  
- Jazz  
- ...

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**Social construction of knowledge:** Musicianship is a complex, multifaceted, culture-dependent and always evolving domain. No one person can define musicianship once and for all. This knowledge domain is thus best explored and co-created by a community of people interested in that subject.

### Challenges:

1. **The model needs to be amenable to continuous change**, likely to happen as a result of a growing knowledge community developing the model and questioning its basis and each other. It must also be engaging, pleasant to use, easy to navigate and modify, and dynamically re-generated as data is added. User feedback from the community of musicians is essential to the long-term viability of this project.
2. **The basic data structure that was chosen for this artifact, the taxonomy, is not rich enough.** This structure is too limited to account for concepts that can appear at different levels (e.g., rhythm), and that are linked to both general areas specific genres.

**Rhythm**

Rhythm skills are useful in...

Country  
Rock  
....

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**Jazz**

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### Future work:

- **From taxonomy to folksomy.** Explore richer and more flexible data structures and how they can be visualized through models generated on the fly.
- **Multimedia.** Explore the facilitation of sound and video capabilities for knowledge sharing.
- **Going live!** Implementing the concept in an online environment and improving it through user feedback.

### References:

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