# *MEI for All! or Lowering the Barrier to Music Encoding through Digital Pedagogy*

Anna Kijas (Tufts University)
@anna_kijas | anna.kijas@tufts.edu
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Ludwig van Beethoven, String Quartet Op. 59 no. 3. *Beethovens Werkstatt*. https://beethovens-werkstatt.de/.

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# Overview

- A little bit about Music Encoding
- Potential Barriers
- Lowering the Barriers
- Approaches to Music Encoding Pedagogy

# Why encode music?

- Access and preservation
- Extensibility and interoperability
- Computational analysis, visualization
- Machine learning
- Dynamic editions
- Search and retrieval
- Sharing and reuse
- Scholarship and research

# Data modeling

- Structural function of a note
- Physical or visual appearance
- Performance realization
- Intellectual characteristics
- Interpretation of a musical source

# What is the Music Encoding Initiative?

"The Music Encoding Initiative (MEI) is a community-driven effort to define a system for encoding musical documents in a machine-readable structure. MEI brings together specialists from various music research communities, including technologists, librarians, historians, and theorists in a common effort to define best practices for representing a broad range of musical documents and structures. The results of these discussions are formalized in the MEI schema, a core set of rules for recording physical and intellectual characteristics of music notation documents expressed as an eXtensible Markup Language (XML) schema. It is complemented by the MEI Guidelines, which provide detailed explanations of the components of the MEI model and best practices suggestions."

About the Music Encoding Initiative, https://music-encoding.org/.

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    endid="#d1e210" staff="1"/>
</measure>
```

Nadia Boulanger, 3 Pieces for Cello and Piano, No. 2 (1915). MEI file can be accessed at
https://github.com/annakijas1/rebalancing-music-canon.

# Potential Barriers to Music Encoding

- Representing Music Notation
- Availability of Music Data
- Learning Markup & Schemas
- Developing Programming Knowledge
- Access to resources

# Representing Music Notation
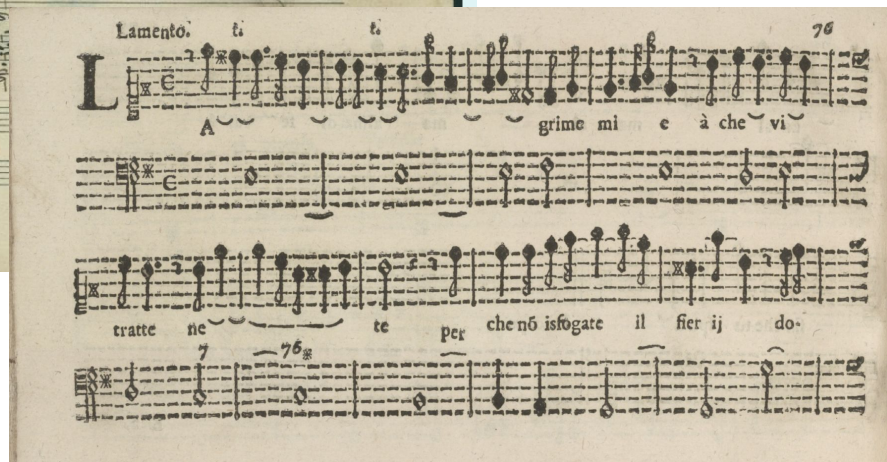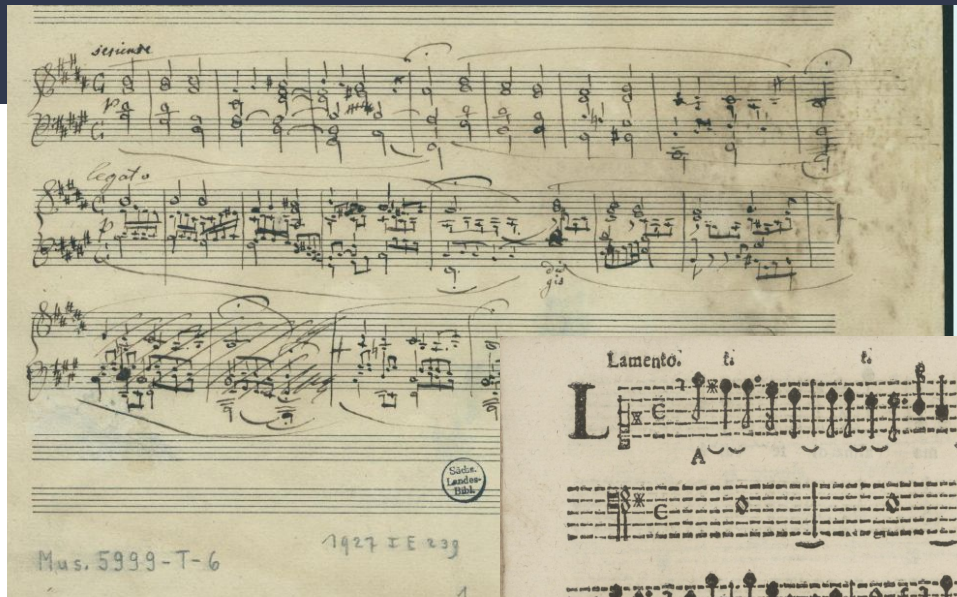


Left to right: **St-Lambrecht,** "Maria Magdalena et altera Maria," c.1300s; **Clara Schumann**, MS arrangement of "Ein feste Burg ist unser Gott," 1838; **Barbara Strozzi**, Lamento, *Diporti di Euterpe, Op.7*, 1658.

# Availability of Music Data

"Obtaining or accessing high quality datasets remains a serious hurdle, especially on a large scale, in a similar way to accessing sources a couple of decades ago. It is a major barrier that needs to be removed if digital musicology research is to be taken to the next level."

Laurent Pugin, "The Challenge of Data in Digital Musicology," in *Frontiers in Digital Humanities*, vol. 2 (2015) DOI=10.3389/fdigh.2015.00004.

# Technical & Technological

- XML
- Metadata standards
- MEI Guidelines and Schema
- Programming skills
- Software and tools
- Techniques and methods

# Access to Resources

- Funding
- Institutional
- Personnel
- Software and tools

# Lowering the Barriers

# Challenge students to think differently...

"Although computational analysis is often seen as a means to a scholarly end, it holds great value in its ability to challenge students to think differently about a resource — to break down the way we convey information and think about ways to work through those abstractions. The disciplinary benefit is not necessarily the development of computational research skills, but instead in teaching students about research methodologies and new ways of thinking about sources."

Brandon T. Locke, "Digital Humanities Pedagogy as Essential Liberal Education: A Framework for Curriculum Development," in *DHQ*, vol. 11, 3 (2017).

# Modes of Instruction

- Semester long course (faculty/librarian)
- One shot workshops (librarian)
- Individual class visit (librarian)
- Embedded semester-long instruction (librarian)
- Projects (faculty/librarian)

# Developing Assignments and Outcomes

ACRL Framework for Information Literacy and Pedagogy

- Authority Is Constructed and Contextual
- Information Creation as a Process
- Information Has Value
- Research as Inquiry
- Scholarship as Conversation
- Searching as Strategic Exploration

Critical (Digital) Pedagogy

- Examine authority and power structures
- Why are we doing this work?
- Whose voices are included/excluded?
- What type of infrastructure or resources are necessary?

# Critical (Digital) Pedagogy

Digital Humanities pedagogy is thinking "deeply and critically about the teaching itself and the interpersonal, societal, and institutional changes it purports to make. It's not just about the classroom. That is to say, we certainly teach DH methods, tools, and thinking, but we're more directly trying to think about how and why we do this work and what larger implications it might have."

Brandon Walsh, "Digital Humanities Pedagogy and Opportunities for Hope" October 17, 2019.

# Approaches to
# Music Encoding Pedagogy

# Encoding, as something music scholars do

"And I would argue more and more that the way we should integrate DH into the undergraduate curriculum is as a naturalized part of what literary scholars or historians or other humanists do. Teach distant reading alongside close reading and don't worry about proving how revolutionary the former is. Such an approach also lowers the barrier for "doing dh" in the undergraduate classroom. You don't have to be a DH expert to create—or better yet steal—a few exciting DH assignments."

Ryan Cordell, "How Not to Teach Digital Humanities" February 1, 2015.

# Document Analysis for Musical Documents



Chart created by Michelle Dalmau, Indiana University. Dalmau/Kijas co-taught at ARL Digital Scholarship Institute: https://github.com/tech-at-arl/Digital-Scholarship-Institute.

# DOCUMENT ANALYSIS

| Document Analysis | Define Document Universe | Gather Samples for Review | Identify Textual Features | Plan for additional content | Determine Relationships |
|---|---|---|---|---|---|

| Document Universe | Sample Documents | Textual Features | Additional Content | Relationships |
|---|---|---|---|---|
| • One or Many?<br>• What is it now and what should it be?<br>• What is/are the genre?<br>• Are the documents similar or different?<br>• What do you know about the documents?<br>• How many versions? | • Recognize the typical<br>• Identify the atypical<br>• Search for the unexpected (or leave room to account for it later) | • What is the level of representation?<br>• How is the text structured and how is content presented?<br>• What are your editorial interventions?<br>• Appearance?<br>• What parts of the documents will be omitted? | • Will additional content apply at the document level (or level of encoding) or at the phrase-level?<br>• Annotations or glosses?<br>• Introduction?<br>• Commentary?<br>• Translation?<br>• Prosopography?<br>• Subject analysis? | • How are the documents to be encoded related?<br>• How are the parts of a document related? |

ARL Digital Scholarship Institute: https://github.com/tech-at-arl/Digital-Scholarship-Institute.

# Use Cases & Prompts

Use Cases

- Library metadata/preservation workflow
- Digital or scholarly edition
- Digital humanities/scholarship project
- Pedagogical tool

Identify key features and elements

- Structural features (e.g. sections or subdivisions)
- Content & context (e.g. metadata, illustrations, prefatory/intro text, lyrics)
- Formatting & Design (e.g. font, style, other features)
- Unique elements

# Sample Research & Analysis Assignment

Identify an early edition of a piano composition published in the 19th century that incorporates a popular operatic theme. Print a copy of this piece to use for your document analysis.

Examine the title page and subsequent pages of the piano composition
- Circle or bracket details that provide information about the work;
- Label these details, for example: "title," "composer," etc.;
- Identify any non-textual details that might be important;
- Identify physical and structural elements, for example "page number," "sections." etc.

# Sample Research & Analysis Assignment

As you examine the composition you will need to answer these questions. Some answers may be in the musical document, however you will also need to use library and online resources.

- Provide the full name of the composer(s) with birth/death dates;
- What is the title of the opera that this work is based on?
- Identify the style or genre of the piano composition and the opera;
- Provide the publisher's name and publication date of the piano work;
- Identify the library or archive that houses the early edition
- Are there additional questions you have about the work(s)?

Create and submit bibliography listing all of the sources you used to answer these questions.

# Maria Szymanowska
## *Caprice, Romance de Joconde* (c. 1819)

Link to PDF: bit.ly/szym-caprice
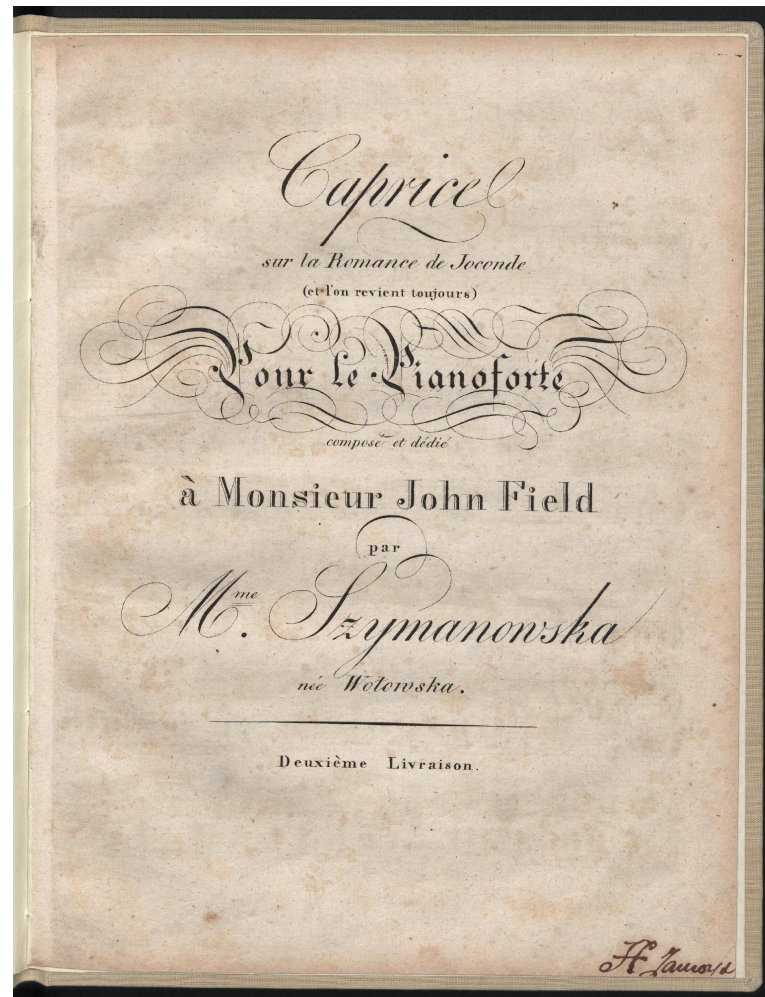
# Synopsis of Isouard's *Joconde, Comédie mêlée de chants* (1814)

Disappointed by the inconstancy of their lovers – Robert, Count of Martigue (tenor), and Joconde (baritone) – Mathilde (soprano) and her friend Edile (soprano) join in a scheme to arouse the men's jealousy. Bored with life at court, the men decide to test the fidelity of the two women by wooing each other's partner. Unaware of the women's conspiracy, the men are disillusioned by their easy success. They disguise themselves as troubadours and leave for the provinces, where they are attracted by Jeannette (soprano), a candidate for the 'rosière' prize to be awarded to a virtuous girl on the following day. Mathilde and Edile, who have secretly followed their lovers, warn Jeannette of the wicked intentions of Robert and Joconde. When the Village Mayor (tenor) overhears the men planning to abduct Jeannette, he assembles the militia. Jeannette comes as planned for the rendezvous, but her lover, Lucas (tenor), is the first to meet her. The militia deliver Robert and Joconde to prison, where they reveal their identity and claim that their journey was undertaken in pursuit of true morals. At the *rosière* ceremony the next morning Robert crowns Jeannette.

## Details

| | |
|---|---|
| **Title** | Caprice sur la Romance de Joconde : (et l'on revient toujours) : pour le pianoforte / composé et dédié à Monsieur John Field par Mme Szymanowska née Wołowska. |
| **Creator** | Szymanowska, Maria (1789-1831) › |
| | Isouard, Nicolo (1775?-1818) Temat muzyczny › |
| **Publisher** | Leipzig : Breitkopf und Härtel |
| **Format** | 7 s. ; 32 cm. |
| **Creation Date** | 1819] |
| **Subject** | Field, John (1782-1837) › |
| | 1801-1900 › |
| | Muzyka polska -- 19 w › |
| | Dedykacje › |
| | Muzyka na fortepian -- 19 w › |
| **Note** | Deuxième livraison. |
| **Identifier** | PUBNUM : 3067 |
| | OCLC : (OCoLC)839261856 |
| **Language** | No linguistic content |

Catalog record for Maria Szymanowska's *Caprice sur la Romance de Joconde*.
https://katalogi.bn.org.pl/permalink/48OMNIS_NLOP/tk91ai/alma991006016269705066

# Maria Szymanowska
*Caprice, Romance de Joconde* (c. 1819)

Link to PDF: bit.ly/szym-caprice

1905 recording of air:
https://www.loc.gov/item/jukebox-121395/

# Hands-on: Document Analysis

Examine the title page and subsequent pages of the piano composition
- Circle or bracket descriptive or bibliographic metadata;
- Label the details (e.g. title, composer);
- Identify physical and structural elements (e.g. page number, measures)
- Identify content and context (e.g. key signature, tempo, ornaments)
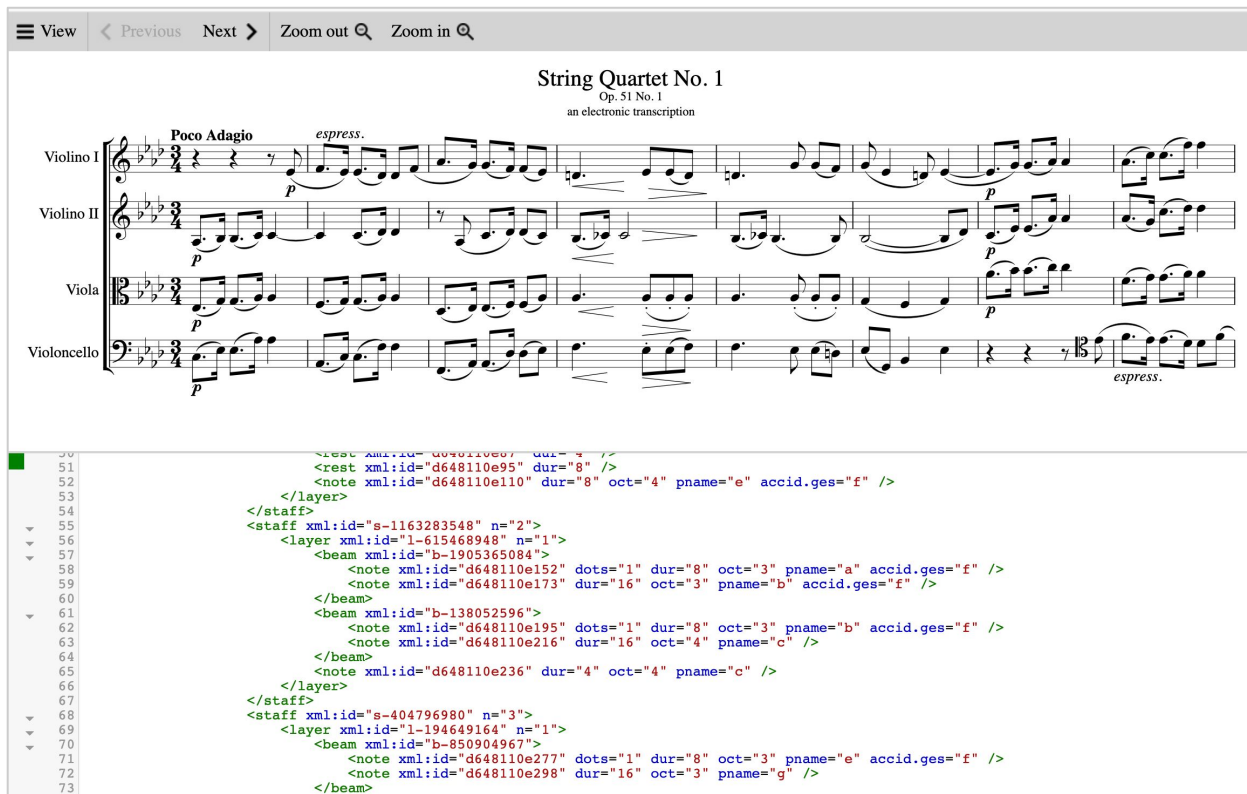- Identify any unique elements (e.g. inscriptions, stamps)

Additional items to consider
- Formatting or design elements
- Source or provenance information
- History of musical work
- Editorial practices

# Ideas for Assignments

- Create an MEI metadata header with required elements;
- Encode a short passage that illustrates a few specific features (e.g. ornaments, slurs);
- Reverse engineer a music encoding project (e.g. how did they make it?);
  - Identify the sources used, makeup of project team, where the data came from, what technology was used for front and back-end, etc.
- Consider how to create a digital scholarly edition from manuscript(s) or early editions;
  - What literature and sources would you need to consult?
  - What editorial decisions might you need to make?
- Consider how to encode details about a recorded performance;
- Identify a research question you might be able to answer using encoded music? Will you require additional tools or software?

# Tools to Explore MEI XML



Verovio Editor
http://www.verovio.org/editor/.
Editor is being developed by
Laurent Pugin.

# Self-guided Tutorials

DLFteach Toolkit: "Introduction to the Music Encoding Initiative"

MEI Tutorials

Programming Historian

TEI By Example



#DLFteach
Toolkit 1.0
Lesson Plans for Digital Library Instruction

## Text Analysis & (En)coding

*Heather Froehlich*
### Using EEBO-TCP in Research & Teaching
This lesson plan introduces advanced undergraduates, graduate students, and faculty to EBBO-TCP (Early English Books Online Text Creation Partnership) and includes a handout.

*Anna Kijas and Raff Viglianti*
### Introduction to the Music Encoding Initiative
This lesson plan introduces the Music Encoding Initiative Guidelines using a range of open source and proprietary tools for editing XML and includes example data and files.

*Liz Rodrigues*
### Introduction to Named Entity Recognition: Manual Labor or Magic?
This lesson plan introduces the computational tool named entity recognition (NER) using the freely available HathiTrust Research Center's NER tool and includes slides and sample data.

*Amanda Koziura and Charlie Harper*
### Exploring Text
This lesson plan introduces digital humanities concepts through an exploration of the process of preparing and analyzing textual data.

*Zach Coble*
### Collecting Data with Web Scraping
This lesson plan introduces faculty, graduate students, and librarians to web scraping using hands-on activities with command line and the Python library Beautiful Soup.

*Patrick Williams*
### Hip Hop Text Analysis
This lesson introduces textual analysis and visualization using Voyant to explore hip hop lyrics.

# An ecosystem of method and approaches

- Critical Information Literacy
- Digital Publishing
- Data & Maps
- Text Analysis & (En)coding
- Digital Exhibits & Archives
- Project Development & Management
- Pedagogy

# Bibliography – Musical Sources

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  - Ciborowska, Anna. *Maria Szymanowska. Piano Works*. Dux Records 450,, 2004.
  - 1905 recording of "Romance Joconde: Dans un delire extreme," https://www.loc.gov/item/jukebox-121395/.

# Bibliography – Literature

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# Tutorials

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- Music Encoding Initiative Tutorials, https://music-encoding.org/tutorials

- Programming Historian, https://programminghistorian.org/

- TEI By Example, https://teibyexample.org/

# Discussion & Questions

Anna Kijas
anna.kijas@tufts.edu
@anna_kijas