Search engines for use with encoded scores
Search engines for encoded scores

1. Themefinder (1996--)
   - www.themefinder.org

2. RISM OPAC search (2011--)
   - opac.rism.info

3. ScoreSearch (2021)
   - https://scoresearch.musiconn.de/ScoreSearch/processQuery?facetList=year%3a%221791%22&bsblID=&includeRelative=true&facetList=author%3a%22Mozart%2c+Wolfgang+Amadeus%22&omrPitches=E4A4C%235C%235B4A4
Other music search engines

1. MIDOMI: [https://www.midomi.com/](https://www.midomi.com/) (sing/hum interface)

2. SoundHound (app)

3. Peachnote
   - Advertises synchronization of IMSLP scores and youtube music videos
   - N-gram viewer and data compiled in 2011 are the only things accessible (2023)
   - Data: 1- to 15-grams extracted from IMSLP (Petrucci ML)
Parameters in search databases

1. The notes
2. Metadata
3. Textual refinements
   ◦ Filters
4. Musical refinements
   ◦ Levels of detail in search
Obstacles (operational) to useful results

1. Too many “hits”
2. Poor quality encodings
3. Pertinent repertory not included in database
1. ScoreSearch (Musiconn)

- Developed by the Bavarian State Library (BSB), Munich
- Searchable material comes from scans
- Editions used come from ViFaMusik (2021)
- Allows access to several instantiations
  - Score
  - MusicXML
  - MIDI, with score following (but note the score layouts!!)
Class exercise:

<table>
<thead>
<tr>
<th>Targets</th>
<th>ScoreSearch, general</th>
<th>ScoreSearch,” exact”</th>
<th>RISM OPAC</th>
<th>Themefinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex. 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex. 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex. 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Example 1

Schubert

Query in ScoreSearch (also RISM)
Allowing any transposition
Matches for Ex. 1 from Themefinder (15,000 incipits)

Six matches

No. 2 match matches of target

Chronological span: 1500-1920
Queries for Ex. 1 from RISM (1.4 million incipits)

Finds **1256 matches** (5 tones) for this:

![Musical notation]

Among these **no matches** occur because...

- RISM focuses on manuscripts from 1600 to 1800 (example from early 19th century)
- no rhythms given in query
- no enharmonic notation in query

Changing to 7 tones, finding **110 matches**:

![Musical notation]
Matches for Ex. 1 from MuseScore

23,525 possible matches (5-tone)

8,028 possible matches (7-tone version); 2,105 by Handel

Same enharmonic obstacles; no meter filter

Nos. 4, 5

4. Ausgewählte KantatenS.162
Graupner, Christoph, 1683-1760
Leipzig : Breitkopf & Härtel 1926

5. PassionsoratoriumS.26
Bach, Johann Ernst, 1722-1777, Bach, Johann Ernst
Leipzig : Breitkopf & Härtel 1914
Most appropriate ScoreSearch match


Stimme 6
Example 2

Beethoven

Only exact matches (7 tones)
Matches for Example 2 in Themefinder

- Six matches
- Desired result is No. 1
Matches for Example 2 in RISM

• 694 matches (7 tones)

• 152 proposed matches for Haydn

• None match target (Beethoven)

• Sample match: Symphony in F Major by Anton Fils (1733-1760):

1.2.1 vl 1, 2/4 Andante molto; B|b
Matches for Example 2 from ScoreSearch

637 proposed matches (no transposition selected)

250 proposed matches for Handel

Most outlandish match shown; missing first note of target
Matches for Example 2 from ScoreSearch

637 proposed matches (no transposition selected)

250 proposed matches for Handel

54 works by Beethoven in results, but no way to view them serially

Mystery meter!
**Match for Ex. 2 in ScoreSearch**

**Cadenza** for Beethoven piano concerto
No. 11 of 54
No match for target

Score search does not discriminate between sections of movement.

Single clef sign for two staves
Example 3

Vivaldi
Proposed matches from Themefinder

1. Anonymous, A soldier is the lad for me

2. Anonymous, The fife or drum

3. Chandler, Solomon, Enfield

- 7-note target
- Three proposed matches
- No true matches
Proposed matches from US-RISM

1. Anonymous, A soldier is the lad for me
2. Anonymous, The fife or drum
3. Chandler, Solomon, Enfield

[See next slide]
Proposed matches from Swiss-RISM (rism.info)

If limited to Vivaldi:

1. Vivaldi, Antonio <1678-1741>
   Concertos - E major; Manuscript copy; GB-Mp Ms. 580C151 vv.1-4, 6

2. Vivaldi, Antonio <1678-1741>
   La primavera - E major; RV 269; Manuscript copy; D-B Mus.ms. 22395/3

3. Vivaldi, Antonio <1678-1741>
   La primavera - E major; RV 269; Print; B-Bc [no indication]

If not limited, proposed matches = 92
Haydn = 23
Proposed matches from ScoreSearch

- 7-note target
- 206 hits (without transposition)
- 89 = Handel
- Some proposed matches

2. Harmonische Freude musikalischer Freundel. u. anderer TeilS.270
Erlebach, Philipp Heinrich
Leipzig : Breitkopf u. Härtel 1914

Händel, Georg Friedrich, 1685-1759, Händel, Georg Friedrich
1875

Liszt, Franz, 1811-1886, Liszt, Franz
Leipzig : Breitkopf & Härtel
Factors that affect search accuracy

1. Anchoring (or not)
2. Mode match
3. Meter (unless 2/2, 4/4 etc.)
4. Confinement of search to one voice (polyphonic, monophonic)
5. Chromatic, enharmonic discrimination (varies with repertory)
6. Partial matches/length of search-string control missing
7. Repertory not included in database?
8. Query length
9. “Matches” skip notes in target
10. Matches skip notes in “match”
11. “Matches” cross parts
12. Matches ignore structural divisions (formal cadence endings; n-gram misses)
Three site listings with lots of music

- Digital Resources for Musicology: drm.ccarh.org
- ADAM: Archive of Digital Applications in Music: adam.ccarh.org
- EVE: Electronic and Virtual Editions of Music: eve.ccarh.org