AI for archives and collections: From processing metadata to analysing content
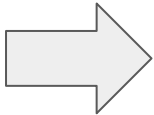
Mathieu d'Aquin
@mdaquin - mdaquin.me

Background: Good Old Fashioned AI

Based on explicit representations and explicit inference.

Using knowledge representations, ontologies, knowledge graphs.

Enabling the use, management and interpretation of results from data mining, machine learning and natural language processing.

The ability to scale up those "symbolic AI" approaches as enabled moving from reasoning upon the metadata of resources in collections to reasoning upon their content.

GOOD
OLD-FASHIONED
ARTIFICIAL
INTELLIGENCE

Example: The LEDA Project

An online database (knowledge graph) of (photos of) paintings representing hell, sinners and punishments from 92 churches in Crete.


Project led by: Angeliki Lymberopoulou, The Open University, UK - http://ledaproject.org.uk/
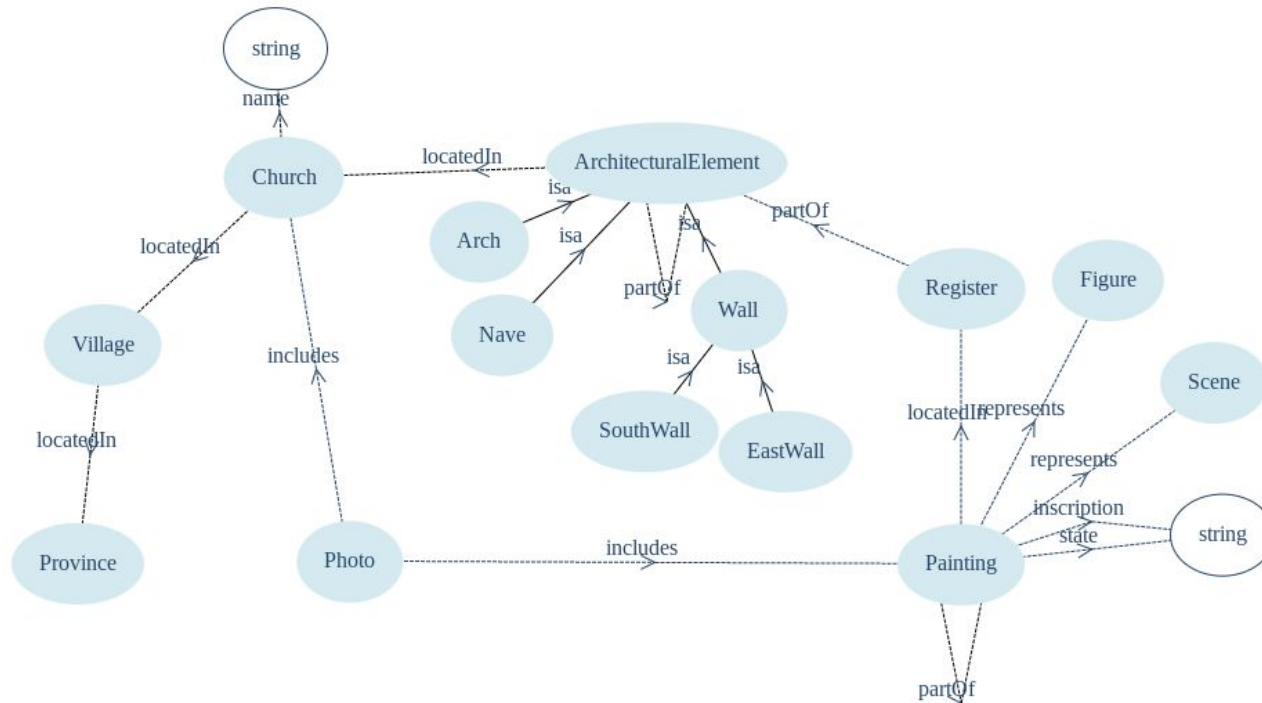
Damned In Hell
in Frescoes in Venetian-Dominated Crete

Home | Churches | Figures | Scenes | Log In | Register

Home

This three-year project is researching representations of the Damned in Hell in the frescoes in churches on Crete. The churches were built during the Venetian domination of the island in the 13th to 17th century and the imagery provides insights into the religious, social and political concerns on the island in the Late Medieval to Early Modern period. The project is gathering photographic and documentary research material to analyse the sinners and punishments represented and explore their relationship to the broader contexts of the island, and the Byzantine and Mediterranean spheres.

The project is being led by Angeliki Lymberopoulou at The Open University, UK, and Vasiliki Tsamakda at the University of Mainz, Germany, and involves a team of academics from seven institutions in the UK, USA, Germany and Greece.
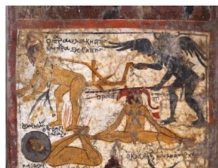
Home | Churches | Figures | Scenes | Log Out | Register

Search:

PREFECTURE	LOCATION	VILLAGE LOCATION	DEDICATION	PAINTINGS
Chania	Achladiakes		Saint Zosimas	40
Chania	Anisaraki		Virgin (and Saint Paraskevi)	33
Chania	Asfentiles		Saint John the Evangelist	19
Chania	Chora Sfakion	Kasteli	All Saints	30
Chania	Deliana		Saint John the Baptist	62
Chania	Fres	Tzitzifies	Saint George Methystis	34
Chania	Garipas		Archangel Michael and Saint George	20
Chania	Hagia Eirini		Christ the Saviour	24
Chania	Hagia Eirini		Virgin	45
Chania	Kadros		Saint John Chrysostom	20
Chania	Kadros		Virgin	26

Damned In Hell
in Frescoes in Venetian-Dominated Crete

Home | Churches | Figures | Scenes | Log Out | Register

Virgin (Church)
Chania, Kadros

Church views:

- Exterior view from west
- Interior church view towards east end and apse
- Interior church view towards north wall

Paintings in the Nave

2nd register

- Punishments of the Damned in Hell
- Female sinner
- Female sinner
- Sinner
- Sinner with scales around neck (who cheats while weighing (o parakampanistis) ?)

3rd register

- Punishments of the Damned in Hell
- Female sinner
- Thief? (with goat)
- Male sinner
- Male sinner (with plough, paravlakistis?)

Female sinner (Painting)

Painting of Female sinner (part of Punishments of the Damned in Hell (Painting))
On the 2nd register of the North wall in the Nave of Virgin Church
Inscription: H MAXI..PEA ?

Other Photos

Angel pushing a group of Sinners into Hell

Paintings

In Chania, Garipas, Archangel Michael and Saint George

HELL IN THE BYZANTINE WORLD

A History of Art and Religion
in Venetian Crete
and the Eastern Mediterranean

EDITED BY
ANGELIKI LYMBEROPOULOU

HELL IN THE BYZANTINE WORLD

A History of Art and Religion
in Venetian Crete
and the Eastern Mediterranean

Volume 2: A Catalogue of the Cretan Material

ANGELIKI LYMBEROPOULOU
and REMBRANDT DUITS

Using knowledge graph to explore content: ArguNest

A tool to annotate and explore the arguments and propositions in philosophical texts, using an ontology connecting those and highlighting philosophical concepts.

Project led by: Ioanna Kyvernitou, NUI Galway, Ireland
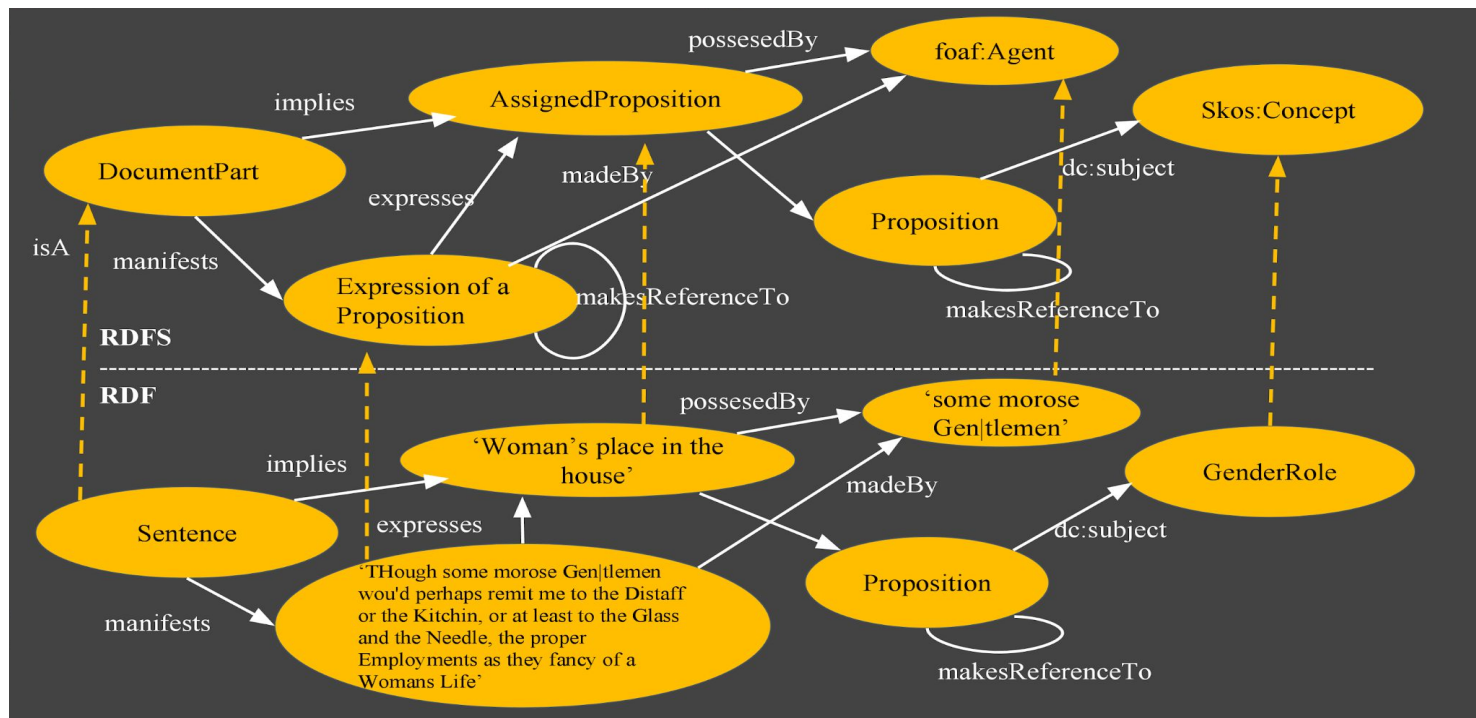
1- Norris, John. Practical discourses upon the beatitudes of our Lord and Saviour Jesus Christ (1693). Vol. 3. 15th edn. (London, 1728), pp. 9, 40-41, 46-47. In Eighteenth Century Collections Online, Gale

[...] That our whole affection be placed upon God, and that we love him so entirely as to love none but him. I come now to justify this sense, which I shall endeavour to establish upon this double basis in general.
I. THAT God is the only author or cause of our love.
II. THAT he is also the only proper object of it

[…] Well then, we have now at length found out the true cause of all our pleasure, and in that the only proper object of our love. And certainly, if ever philosophy were a handmaid to divinity, it is now, as furnishing us with a certain ground for the most sublime and noble conclusion in the world, the full, perfect and entire love of God, which now appears to be founded upon principles, and to be demonstrable in a clear and distinct order of reasoning. For if God be the only true cause that acts upon our spirits, and produces our pleasure, then he only does us good, he only perfects our being and makes us happy; and if he only does us good, then he only is our good; and if he only is our good, then he only is lovely, or the proper object of our love; and if he only is lovely, then 'tis plain that we ought to love none but him, and him entirely. Or to argue backwards, we are to love nothing but what is lovely; nothing is lovely but what is our Good; nothing is our Good; nothing does us good but what causes Pleasure in us; nothing causes Pleasure in us but God; therefore we are to love nothing but God. I say nothing but God, for he is the only lovely Object, and he is infinitely so. Nothing but God, for he only is our Good. Nothing but God, for he only does us good and makes us happy. Nothing but God, for he only is the author of all our pleasure; and in him we not only live, move and have our being, but have also all the joy and comfort of our being. Whatever degree of good we have received, we have received it of him; whatever we enjoy, we enjoy it in him; and whatever we expect, we expect it from him, with whom is the Well of Life, [Book of Psalms 36. 9.] And in whose light we hope to see light; and therefore we are to love none but him, and him with the whole heart, soul, and mind, with the full weight of our desire, with all the activity of our love.

[…] If it should now be objected (as 'tis very probable it may) that the enlarging this first commandment to such a magnitude, will make it devour and swallow up the second. For if the love of God must be thus perfect and entire, so as to be exclusive of all creatures [i.e. human beings], what room can **then be left for the love of our neighbour? To this the answer is very easy and very clear. If our love to God and our neighbour were of the same kind, the entire love of the former would indeed wholly exclude that of the latter. But this is not the case. […] That is in short, we love God with love of desire, and we love our neighbour with love of benevolence or charity. But no**w the entire desire of God is very consistent with all manner of benevolence to our neighbour. It does indeed wholly exclude all love of desire towards him. But this is what I contend for, I would have the love of God so vehement and so ardent, as to burn up, devour, yea, utterly annihilate all desire of the creature.

2- Astell, Mary, and John Norris. Letters Concerning the Love of God between the Author of the Proposal to the Ladies and Mr. John Norris, Wherein His Late Discourse, Shewing That It Ought to Be Intire and Exclusive of All Other Loves, Is Further Cleared and Justified (London, 1695), pp. 1-7. In EEBO database.

LETTER 1. To Mr. Norris.

SIR,

[…]Reading the other day the third volume of your excellent Discourses, as I do everything you write with great pleasure and no less advantage; yet taking the liberty that I use with other books, (and yours or nobody's will bear it) to raise all the objections that ever I can, and to make them undergo the severest test my thoughts can put them to before they pass for current, a difficulty arose which without your assistance I know not how to solve.

Methinks there is all the reason in the world to conclude, That GOD is the only efficient cause of all our sensations; and you have made it as clear as the day; and it is equally clear from the letter of the commandment, That GOD is not only the principal, but the sole object of our love: But the reason you assign for it, namely, because he is the only efficient cause of our pleasure, seems not equally clear. For if we must love nothing but what is lovely, and nothing is lovely but what is our good, and nothing is our good but what does us good, and nothing does us good but whatever causes pleasure in us; may we not by the same way of arguing say, That that which causes pain in us does not do us good, (for nothing you say does us good but what causes pleasure) and therefore can't be our good, and if not our good then not lovely, and consequently not the proper, much less the only object of our love? Again, if

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Select a concept to see related terms in the text:

[Pain ▾]

Definition of concept (from Wikipedia):
Select a concept above to see its definition.

Select parts of the text to annotate:
◉ Proposition ○ Argument

[delete annotation](#)

[whatever]

This proposition or argument is:
○ Stated by the authors
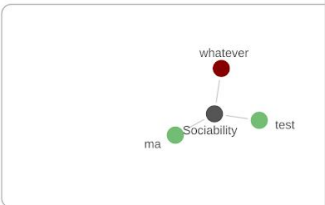◉ Reference to someone else's statement

[lala]

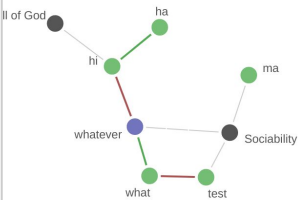**The subject(s) of this proposition or argu**

[Sociability]

[-- concept --]

Visualisation

● selected annotation ● argument ● propos subject
— subject — supports — contradicts

Create relation between proposition(s) and/or argument(s)

[proposition:whatever ▾]

[supports ▾]

[argument:what ▾]

[OK]

proposition: whatever

existing "supports" relation
argument: what (delete)

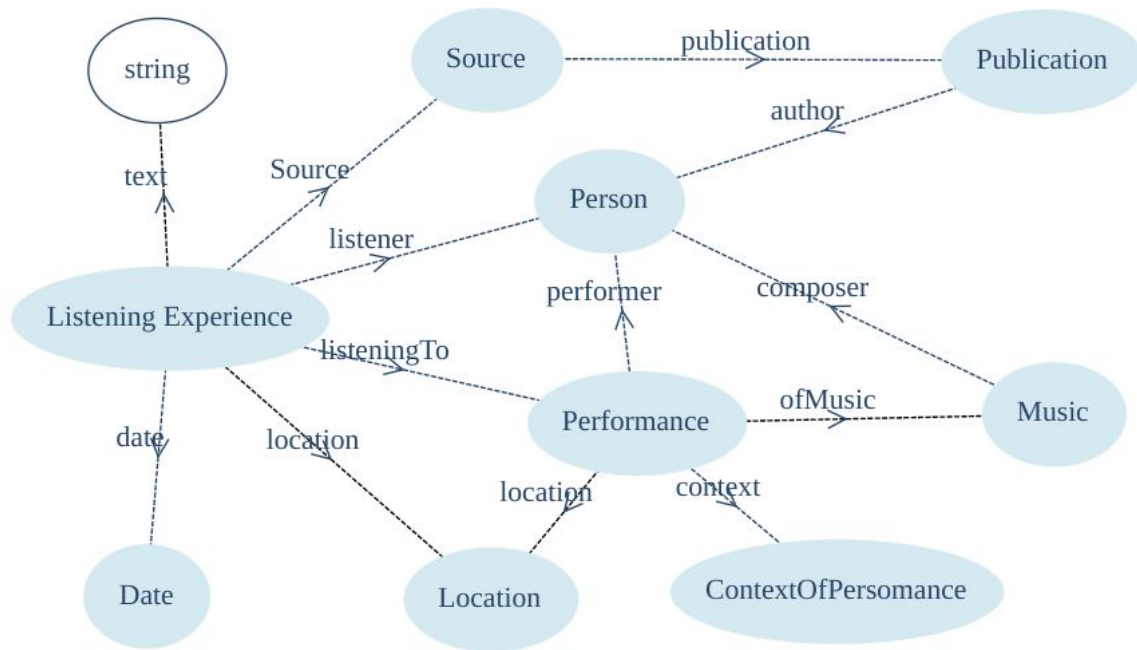**existing "contradicts" relation**
argument: hi (delete)

● selected annotation ● argument ● proposition ● subject
— subject — supports — contradicts

Linking to the rest of the word: The Listening Experience Database

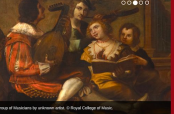Representing accounts of people listening to music, the music they were listening to and the sources of the accounts.

led

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BROWSE BLOG FORUM

Search

Welcome to The Listening Experience Database

This is an open and freely searchable database that brings together a mass of data about people's experiences of listening to music of all kinds, in any historical period and any culture.

There are now **9019 listening experiences** from **1523 locations** in the database, with **907 more** experiences awaiting approval. Help us to add more.

Search database

Try for example: Benjamin Britten, Festival, Rock or Bolero

HOW TO GET INVOLVED

1 Sign up
2 Browse Experiences
3 Add more to the database

SIGN UP

LATEST EXPERIENCE

Queen Victoria et al. in Windsor Castle, Windsor - 1877

"Anton Rubinstein and I had received the Queen's command to go to Windsor Castle one afternoon and play and sing to her. After receiving us most graciously, Her Majesty seated herself near the tail-end of the piano, evidently in order to be able to see Rubinstein's face [...]"

Read more

RANDOM EXPERIENCE

Queen Victoria et al. in Windsor Castle, Windsor - 1877

"Anton Rubinstein and I had received the Queen's command to go to Windsor Castle one afternoon and play and sing to her. After receiving us most graciously, Her Majesty seated herself near the tail-end of the piano, evidently in order to be able to see Rubinstein's face [...]"

Read more

LATEST BLOG ENTRIES

The Listening Experience Database Project Conference 2018

Submitted by simon brown on Fri, 29/07/2017 - 13:03

"The experience of listening to music: methodologies, identities, histories"

6-7 March 2018, The Open University, Milton Keynes, UK

Following on from our inaugural conference in 2015, the Listening Experience Database project team is pleased to announce the second project conference.

Read more

Contributor Newsletter July 2017

Submitted by simon brown on Fri, 14/07/2017 - 09:41

Dear all,

Here's the latest newsletter from the Listening Experience Database project:

LED15 conference proceedings

The proceedings of last year's conference 'Listening to music: people, practices and experiences' are due out this month in a freely accessible online format. They include papers on a wide range of perspectives on listening, from a number of the first LED project team as well as scholars from outside the project. We'll let you know when they become available.

Tags:
newsletter

Read more

The hidden listeners: uncovering the historical evidence for the experience of music

Submitted by simon brown on Wed, 01/03/2017 - 15:56

The hidden listeners: uncovering the historical evidence for the experience of music.

Wednesday 29 March 2017
Time: 11.00-15.00
Venue: Blythswood Room, Mitchell Library, North Street, Glasgow
Booking: https://hiddenlisteners.eventbrite.co.uk

Read more | Log in to post comments

Tweets

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Search

Refine search

location   All 126
London (24)
Queen Elizabeth Hall (22)
Royal Festival Hall (16)
Paris (13)
Boston (10)

listener   All 142
Benjamin Britten (22)
Thomas Ryan (20)
Dr Charles Burney (15)
Sergey Prokofiev (11)
Hermann Klein (9)

reported in   All 86
London Sinfonietta (22)
Recollections of an old ... (20)
Journeying boy / Benjami... (17)
Southbank Centre Archive (16)
Music, men and manners i... (15)

music   All 384
Black Box Music (12)
Kuro tori'neru for clarin... (12)
Quartettsatz for clarine... (12)
Run time error (12)
Sextet for clarinet, tru... (12)

Content   Listening Experience

Search results

Prev 1 2 3 4 5 ... 12 13 Next

Benjamin Britten in Gresham's School - October, 1928, 07:00 PM (reported in "Journeying boy : the diaries of the young Benjamin Britten 1928-1938")

Recital in the evening. Bach's Air on G string, Gavotte in E and Handel sonata in E (Miss Chapman) very good. Mr Greatorex, Mr. Taylor (piano) and Miss Chapman, Mr. Taylor was given a great Reception, tho' he didn't deserve it. It looked as if he was a bad sight [...]

Thomas Twining in Ipswich - 1799 (reported in "A selection of Thomas Twining's letters 1734-1804 : the record of a tranquil life")

I had some pleasure in fiddling with Miss Marshall on the Wednesday evening, but the pleasure was greatly diminished by its villainous deafness of mine, which continues just as it was in Norfolk. Accompaniment, Mr. Twining, requires a great delicacy of piano, & great [...]

John Marsh in London - 10 February, 1774 (reported in "The John Marsh Journals: The Life and Times of a Gentleman Composer (1752-1828)")

On the 10th. I went with my friend Mr Blake to the annual concert for the Musicians Fund led by Cramer, at the Opera House (the 1st. I had ever been at) where I heard solo concertos on the violin violoncello clarinet hautboy & bassoon & heard Signore Davis & Millico [...]

John Marsh - 8 September, 1774 (reported in "The John Marsh Journals: The Life and Times of a Gentleman Composer (1752-1828)")

The annual Music Meeting at Windon beginning on the 7th., I went there on Thursday the 8th & attended the oratorio of L'Allegro Penseroso at St John's Room, at which I was much pleas'd by the manner of Miss Linley's singing "The prince unable to complain" (in which she [...]

Benjamin Britten in Holt - 23 January, 1930 (reported in "Journeying boy : the diaries of the young Benjamin Britten 1928-1938")

I really am getting alarmed at the lack of a letter from Mummy. Especially, as I dreamed about death 2ce [sic] last night, & both times tho' not she, it was connected with her. I don't like to write in case our letters cross, but I shall certainly write soon, in a long [...]

Benjamin Britten in Holt - 26 January, 1930 (reported in "Journeying boy : the diaries of the young Benjamin Britten 1928-1938")

Chapel at 8.15,10.30 & 6.30. Quite nice services, with a typ. J.R.E sermon at 6.30. Quite harmless but striking out no new path & lacking any orig. or helpful thought. Write letters in morning, & then listen to grm. in aft. (pt. of time Brahms D'bl concerto on new [...]

Benjamin Britten in London - 21 January, 1931 (reported in "Journeying boy : the diaries of the young Benjamin Britten 1928-1938")

I have an appointment with the Director at College at 11.0. I go there & find he's out. Before that, I copy out "Sport". Return and have an hour's practice. Lesson with Benjamin at 2.40 I go through 2nd & 3rd movs. of his new Vln. Concerto, which I like very much. It [...]

Benjamin Britten in Royal College of Music - 26 February, 1931 (reported in "Journeying boy : the diaries of the young Benjamin Britten 1928-1938")

Composition lesson at 10.0. Ireland is quite pleased with my latest carol. Go to Augeners & Chesters for Brahms op 21. variations & Prokofiev op. 12 prelude for pft. study. Practice in afternoon. No madrigals. Walk with Hendersons after tea. Go to Chamber Concert at [...]

Benjamin Britten in Queen's Hall - 13 March, 1931 (reported in "Journeying boy : the diaries of the young Benjamin Britten 1928-1938")

Begin completely re-writing "Christ's Nativity". Practise 11.45–12.45. Go to College in a fruitless effort to find out about R.C.M. Union. I practise 3.30–4.30. Go to quite a good concert (British Women's Symphony Orch) at Queen's Hall with Barbara [...]

Benjamin Britten in Wigmore Hall - 19 March, 1931 (reported in "Journeying boy : the diaries of the young Benjamin Britten 1928-1938")

Quite good lesson with Ireland in Chelsea at 10.0. Practise afternoon, tea with Barbara & Mummy at Selfridges at 4.45. Go with Mummy (with tickets from Mrs. Brosa via. Mrs Bridge) to topping recital by Antonio Brosa. He is simply superb. Incredible technique, with [...]

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led

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Search

places

Show 25

Search places

Place
undefined
undefined
undefined
(Old) Philharmonic Hall, Liverpool
31 Tite Street, London
91, Decatur Street, Atlanta
A synagogue in Paris
Aachen
Abbey Road Studios
Aberdare
Aberystwyth

Showing 1-25 of 1,644   1 2 3 ... 66 »

Evidence

File Edit Insert View Format

Formats B I

Quote the description of the listening experience (required)

p   Words: 0

Source
Type a source title/description to receive suggestions (required)

Listeners

Music

Location   on a trip
where the experience occurred (might differ from the locations of performances)

What was the listening environment?

Location   on a trip
where the experience occurred (might differ from the locations of performances)

What was the listening environment?

Solitary   Private space   Indoor
In the company of others   Public space   Outdoor

On   DD   Month   YY   YY   Time   range

Duration   days   hours   minutes

How was the music transmitted?
Live (concert, theatre, park etc.)
Broadcast (radio, TV, podcast etc.)
Playback (vinyl, tape, CD, file etc.)

Additional information / Context

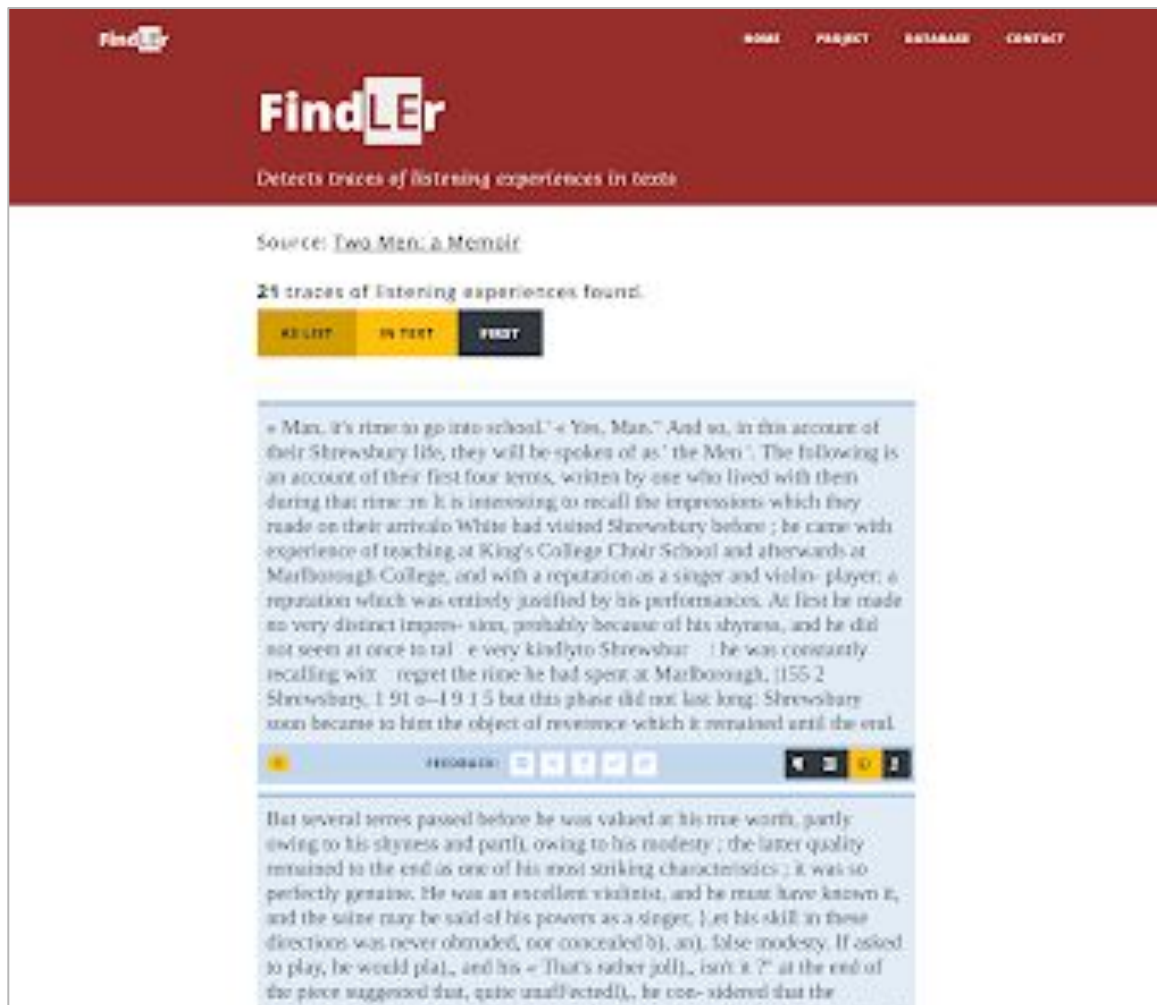By submitting this entry for review you agree to the Copyright and conditions of use.

Save Draft   Submit

Follow Up: Finding traces of listening experiences in texts (FindLEr)

Mining the data from existing listening experiences to find ways to identify new ones.

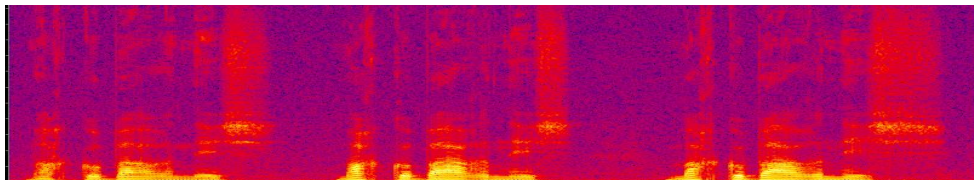Project led by: Enrico Daga, The Open University, UK

Mining content in and across collections: Polifonia

Explicit representation of musical data from multiple repositories (including Irish Traditional Music) to extract patterns (in melody, rythme, harmony, structure) in individual pieces of music, in whole repositories and across repositories.
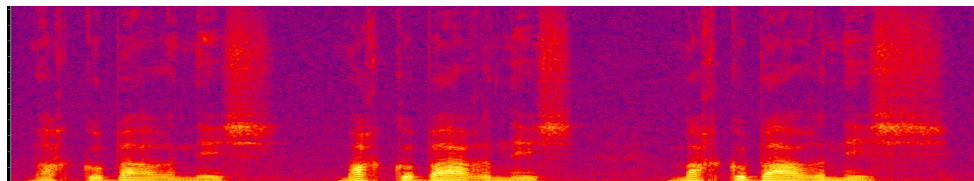
Notes

Signal

Context

Project led by: Valentina Presutti, University of Bologna, Italy - see https://polifonia-project.eu/

Mining content in and across collections: Polifonia

Explicit representation of musical data from multiple repositories (including Irish Traditional Music) to extract patterns (in melody, rythme, harmony, structure) in individual pieces of music, in whole repositories and across repositories.
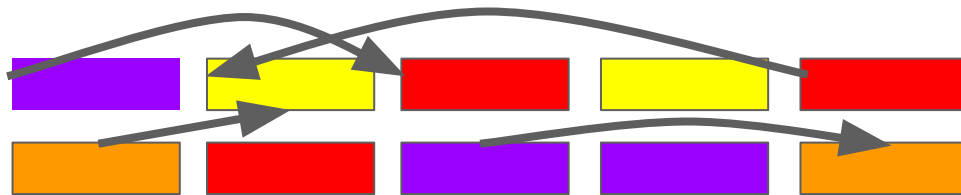
Patterns
(Structure)

Notes

Signal

Context

Project led by: Valentina Presutti, University of Bologna, Italy - see https://polifonia-project.eu/

Mining content in and across collections: Polifonia

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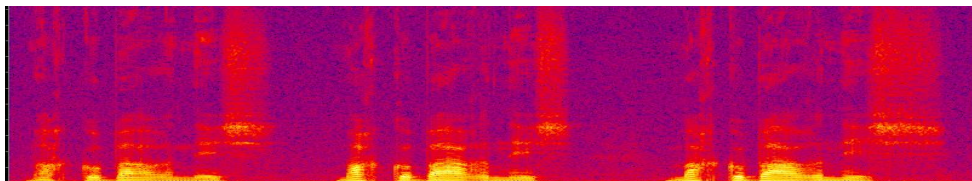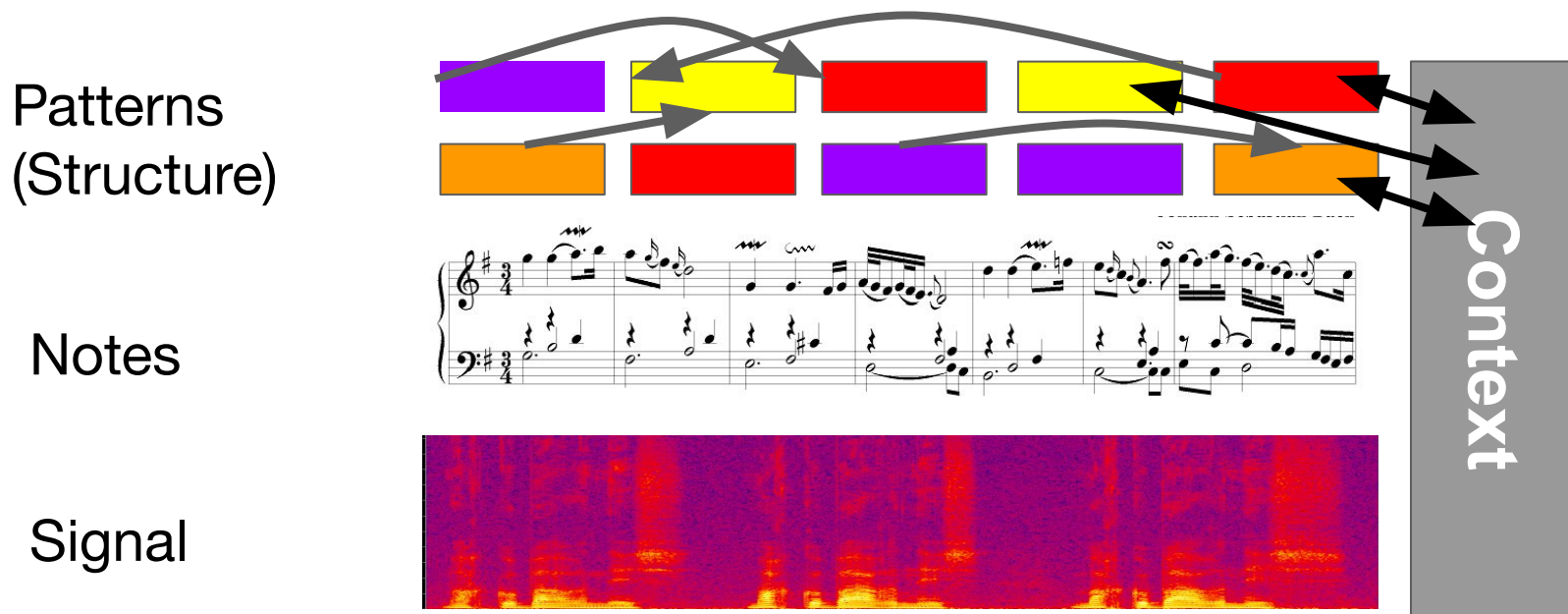

Patterns (Structure)

Notes

Signal

Context

Project led by: Valentina Presutti, University of Bologna, Italy - see https://polifonia-project.eu/

Mining content in and across collections: Polifonia

Explicit representation of musical data from multiple repositories (including Irish Traditional Music) to extract patterns (in melody, rythme, harmony, structure) in individual pieces of music, in whole repositories and across repositories.

Patterns (Structure)

Notes

Signal

Context

Rhythmic patterns in
Irish traditional music
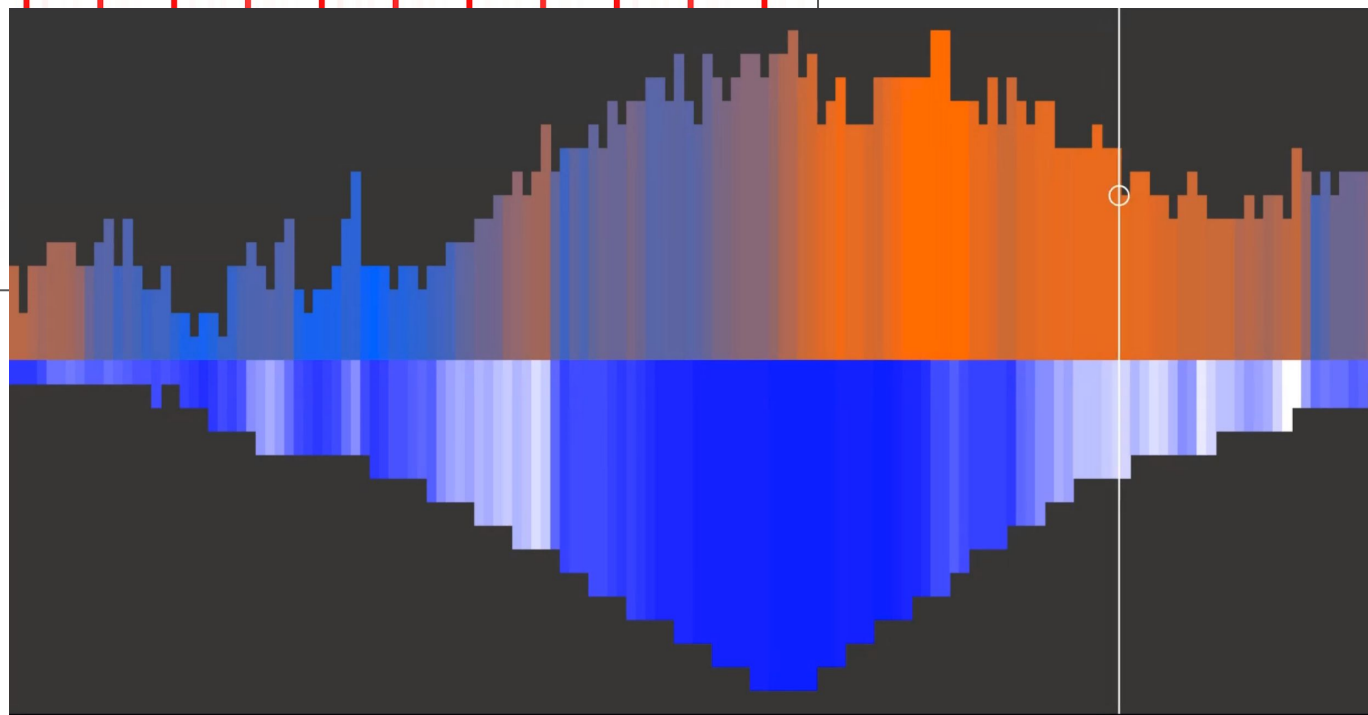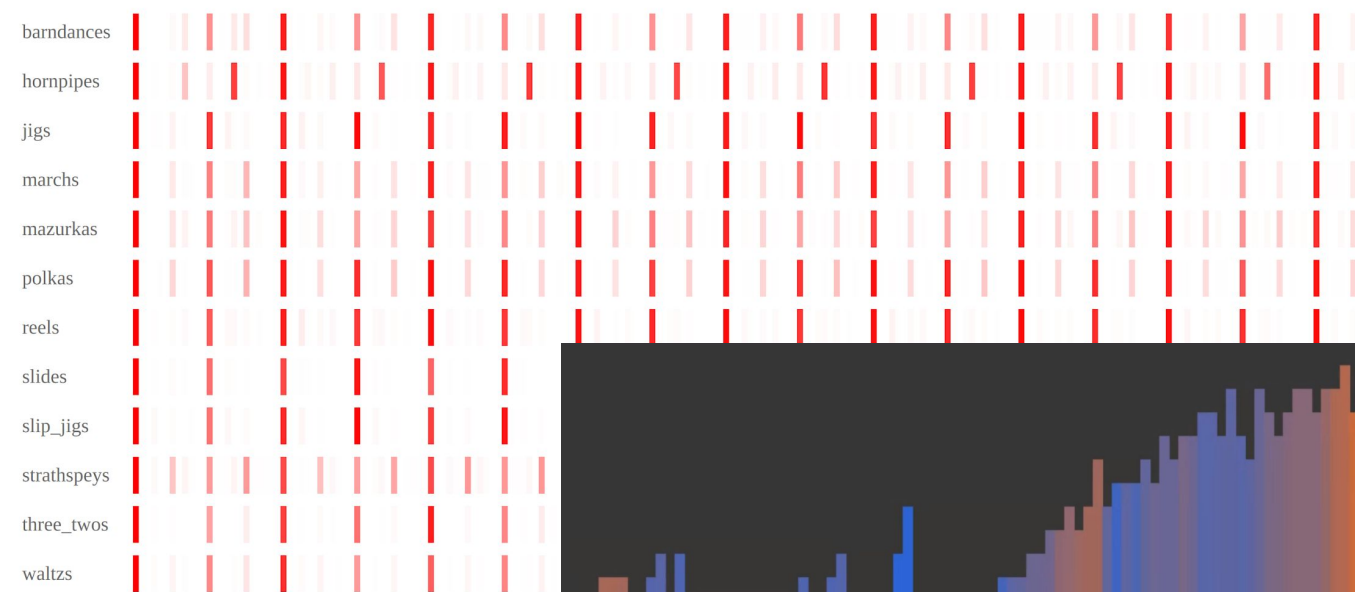
Sonification of weather data
using melodic building blocks
from collection of Irish tunes -
see
https://youtu.be/gc44P9sszFA

Conclusion

Knowledge graphs, ontologies and explicit inference allow us not only to structure, represent and reason upon collections as registries of metadata, they enable relating those metadata to content, whether it is text, images or music.

By combining knowledge-based, symbolic approaches with data mining and machine learning methods, it becomes possible to explore very large repositories and understand how what they contain relate to other things, concepts, and repositories.

Such methods enable new forms of research methodologies combining the quantitative and qualitative analysis of repositories, together with a deep understanding of their content.

Thank you