

AI and Automatic Visual Recognition: Some Thoughts on the New Digital Methodologies for Image Retrieval

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unibz

Biblissima 
Patrimoine écrit du Moyen Âge
et de la Renaissance



 **Seebibyte**

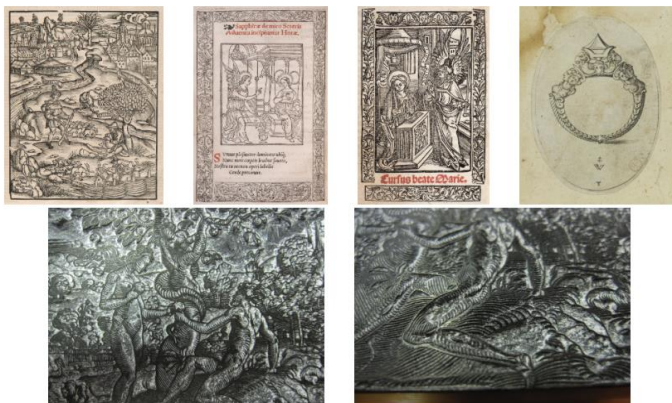
LYON 16ci - A Visually Searchable Database for Book Illustrations Printed in Lyon between 1480 and 1600

[Visual and Metadata Search](#) [Upload and Search](#)

Lyon 16ci is an online database of illustrations printed in Lyon during the Renaissance period. It is the result of the cooperation between the Visual Geometry Group in Oxford and the project "The Illustrated Book in Lyon 1480-1600", supported by the Equipex Biblissima (2016-2019) and by the Venice Centre for Digital and Public Humanities (2020-2021).

This database can be searched using an image as a search query as well as using text keyword for searching metadata assigned to the illustrations. Such a visual and text search capability allows research scholars to track and investigate the production, use, circulation and copying of woodblocks, iconographic subjects, artistic styles, within the 16th-century printed illustrated editions.

The database is publicly accessible and accepts contributions of new illustrations and metadata from research scholars from all over the world. Lyon 16ci is being developed by [Dr Barbara Tramelli](#) (Ca' Foscari University, Venice/St. Benet's Hall, Oxford), and [Dr Abhishek Dutta](#) (VGG, Oxford).



Matching patterns – Assyrian stone tablets



Images courtesy Prof. Jacob Dahl, Oxford Faculty of Oriental Studies

Matching azulejo tiles



Images courtesy Maria do Rosário Salema de Carvalho, University of Lisboa

Visual Geometry Group, University of Oxford

Bodleian Ballads Search

In cooperation with Bodleian Libraries UNIVERSITY OF OXFORD

File: Scogli file | nessuno selezionato or URL: | Whole sheet

Representative examples of images in the database



List of images in the database

Images 1 to 20 of 916. [Next](#)



15cILLUSTRATION

Home [Search Using Database Images](#) [Search Metadata](#) [Index of Illustrations](#) [Illustrations Grouped by ISTC](#) [Contributing Libraries](#) No file chosen

15cILLUSTRATION is a searchable database of 15th-century printed illustrations developed by the [15cBOOKTRADE](#) project in collaboration with the [Visual Geometry Group](#). 15cILLUSTRATION is the first comprehensive and systematic tool to track and investigate the production, use, circulation, and copy of woodblocks, iconographic subjects, artistic styles, etc. within 15th-century printed illustrated editions.

Search Using Database Images

This searchable database currently contains 5128 printed illustrations from the 15th century which can be searched using one of the images already in this database.

Search Metadata

The 15th-century printed illustrations present in this database are linked to ISTC metadata and manual annotations created by scholars.

Upload and Search

The 15th-century printed illustrations can also be searched using a new image uploaded from your computer. In the top right corner of this page, click "Browse" button to upload an image and click "Upload and Search" to search using this image.

News

- 31 Mar. 2020: Added 403 new illustration to the database
- 24 Feb. 2020: [The Use and Reuse of Printed Illustrations in 15th-Century Venetian Editions](#) has now been published as a book chapter in [Printing, R-Evolution and Society 1450-1500: Fifty Years that Changed Europe](#).
- 21 Sep. 2018: Matilde Malaspina and Abhishek Dutta presented a paper titled "The use and reuse of printed illustrations in 15th-century Venetian editions" in the "Printing Revolution and Society 1450 - 1500 - Fifty Years that Changed Europe" conference on Sep. 21, 2018 held in Palazzo Ducale, Venice (Italy).
- Sep. 2018: launch of [15cILLUSTRATION](#) online database and website.

15cBOOKTRADE



Development and maintenance of 15cILLUSTRATION is supported by [15cBOOKTRADE](#) and EPSRC programme grant Seebibyte: Visual Search for the Era of Big Data (EP/M137741)

1516

A Visually Searchable Database of Printed Illustration from the 15th and 16th centuries

[Visual and Metadata Search](#) [Upload and Search](#)

An online database of illustrations printed in the 15th and 16th century. This database can be searched using an image as a search query using text keyword for searching metadata assigned to the illustrations. Such a visual and text search capability allows research scholars to track and investigate the production, use, circulation and copying of woodblocks, iconographic subjects, artistic styles, within 15th and 16th-century printed illustrated editions. The database is publicly accessible and accepts contributions of new illustrations and metadata from research scholars from all over the world. The 1516 project is an evolutionary next step of the existing [15cILLUSTRATION](#) database, which is based solely on illustrations printed in the 15th century. The possibility of searching together images printed in the 15th and in the 16th century represents a natural step forward, as woodblocks and iconographic themes travelled well beyond chronological boundaries. The 1516 database is being developed by [Dr Abhishek Dutta](#), [Dr Matilde Malaspina](#) and [Dr Barbara Tramelli](#) under the guidance of [Prof. Andrew Zisserman](#) and [Prof. Cris](#)

Example Search Queries

1 Search

- Show all the images that have "[Aesop](#)" keyword in their bibliographic and descriptive metadata
- Show all the images that have keywords beginning with "[Aesop*](#)" (e.g. Aesop, Aesopus, ...)
- Search for images with "[Aesop AND Dog](#)" keywords in their bibliographic and descriptive metadata
- Search for images with "[Aesop AND Dog OR Bird](#)" keywords in their bibliographic and descriptive metadata
- Show all images printed [between year 1501 and 1520](#).
- Group all images by their [ISTC](#) identifier or by [year](#).

Accueil > Appels à projets > Le livre illustré à Lyon (1480-1600)

Le livre illustré à Lyon (1480-1600)

Établissement porteur

[Bibliothèque de l'Enssib](#)

Partenaires

[Centre Gabriel Naudé](#)

[Institut d'Histoire des Représentations et des Idées dans les Modernités \(IHRIM\)](#)

[Groupe Renaissance et Âge Classique \(IHRIM\)](#)

[Faculty of Mediæval and Modern Languages, Humanities Division, Oxford University](#)

[The Warburg Institute, School of Advanced Study, University of London](#)

[Bibliothèque municipale de Lyon](#)

Lauréat en

2015

2017

2018



THE WARBURG
INSTITUTE

SCHOOL OF
ADVANCED STUDY
UNIVERSITY
OF LONDON

The Warburg Institute Iconographic Database

Search the database

Search

[Show advanced search options](#)

105,099 images in 52,550 subject categories

Browse by selecting a subject category below, or search by keyword above.



Iconography

RELIGIOUS ICONOGRAPHY

Biblical cycles / Printed Cycles / Quadrins historiques de la Bible, Lyon (de Tournes), 1583

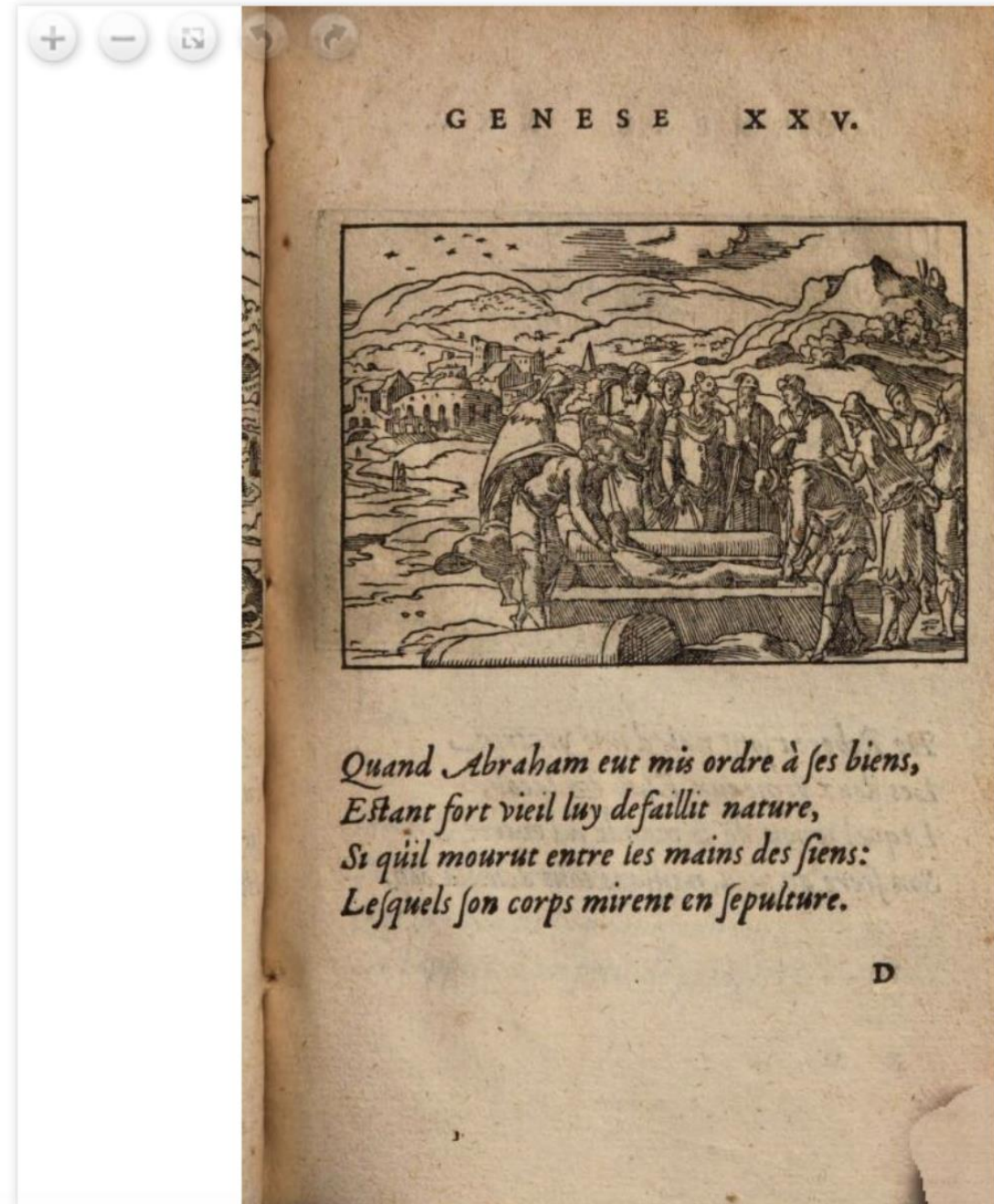
Old Testament / Genesis / Abraham and Isaac / Abraham's death / Burial (Gen. 25:9)

Further details

woodcut. Image also used in the editions: 1553, 1555, 1558, 1560. Image also used in 'Biblia Sacra', 1554, 1556, 1558, 1569; 'La Sainte bible', 1551, 1554, 1557, 1559; 'La bible', 1561; 'Figure del vecchio testamento', 1554; 'Histoire de Fl. Josephe', 1562; 'Figuren Ausz der Bibel', 1554

Artist or creator

Salomon, Bernard (born 1508 or 1510, died 1561)



VGG Image Search Engine (VISE)

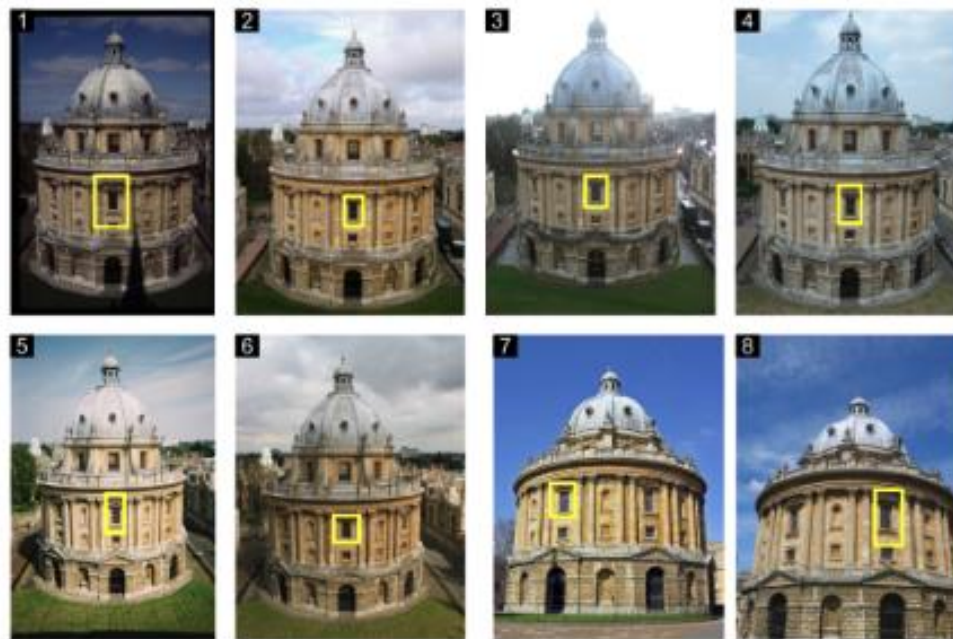
Abhishek Dutta, Relja Arandjelović, Andrew Zisserman

VGG Image Search Engine (VISE) is a free and open source software for visual search of a large number of images using an image as a search query.



Search

Draw search **query** region
and click "Search"



Results of Visual Search

Bodleian Ballads
Search



In cooperation with



Bodleian Libraries
UNIVERSITY OF OXFORD



File: nessuno selezionato

or URL:

Whole sheet

Representative examples of images in the database



List of images in the database

Images 1 to 20 of 916. [Next](#)

4o Rawl. 566(1)



4o Rawl. 566(2)



4o Rawl. 566(8)



4o Rawl. 566(9)



4o Rawl. 566(10)



4o Rawl. 566(11)



4o Rawl. 566(12)

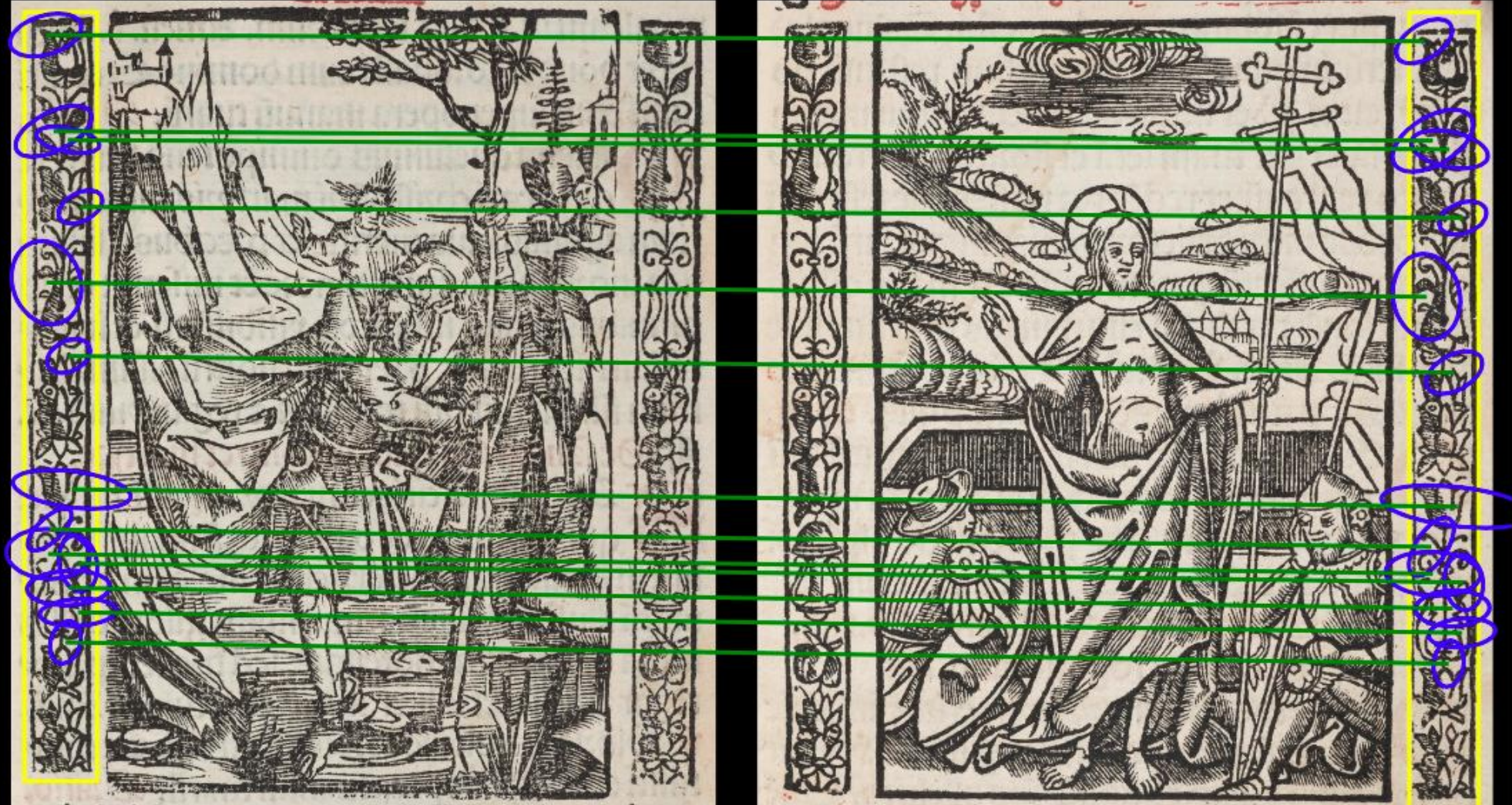


4o Rawl. 566(13)



Visual Features and their Correspondences

Query Region: (x,y)=(17,15) (width,height)=(92,975) | Putative matches = 350 | Spatially verified matches = 129



Query: 16ci/hortulus anime/chomarat 6541_10.jpg

Match: 16ci/hortulus anime/chomarat 6541_40.jpg

Draw all 129 regions

Draw random **13** regions

Draw:

Features

Correspondence | Line width **3**

Matching patterns – Assyrian stone tablets



Images courtesy Prof. Jacob Dahl, Oxford Faculty of Oriental Studies

Matching azulejo tiles



#inliers = 67

Sur le chameau & beuf de Plutarque.
L'homme enuers l'homme, Dieu.



Quelque chameau, & vn beuf trop chargé
Alloyent vn iour ensemble voyager:
Le beuf voulant être vn peu deschargé
Prie au chameau le vouloir aliger:
Mais nul secours receut à son danger,
Tant qu'il mourut. Lors par cōmandemēi.
L'ingrat chameau fut forcé iustement
Porter le beuf & son fardeau ensemble:

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Ioan. Stradanus inuenit. Ioan. Galle excudit.

IMPRESSIO LIBRORVM.

Potest vt vna vox capi aure plurima:

Linunt ita vna scripta mille paginas.

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File Id	6380
Filename	16ci/hortulus anime/chomarat 6541_10.jpg



Search

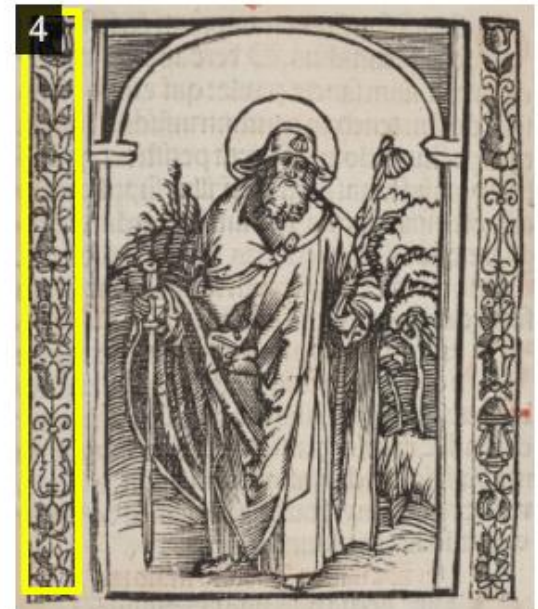
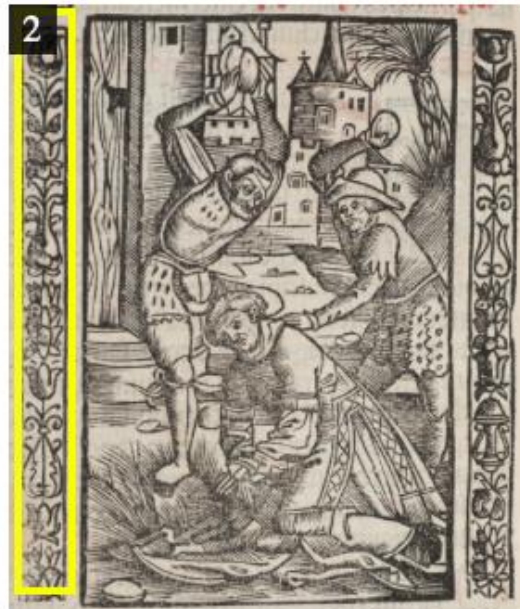
Draw a region on the image to define the search query.

To zoom the image, use 🔍 🔍



Query: [16ci/hortulus anime/chomarat 6541_10.jpg](#)

Search Results

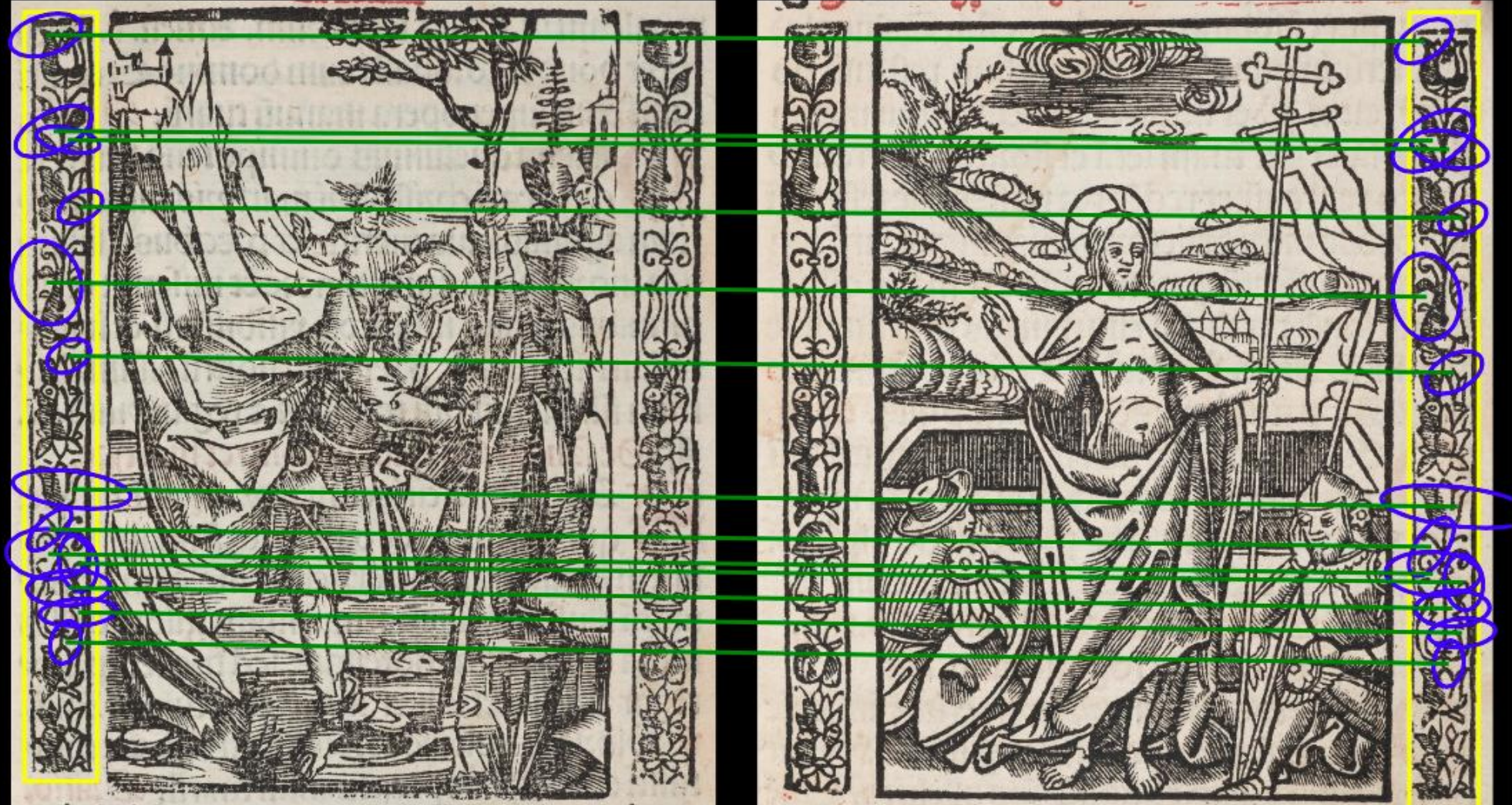


Difference between Query and Match



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Match: 16ci/hortulus anime/chomarat 6541_40.jpg

Draw all 129 regions

Draw random regions

Draw:

Features

Correspondence | Line width



Query: [16ci/GENEVA/Geneva E+M 326 \(2\).JPG](#)

Search Results



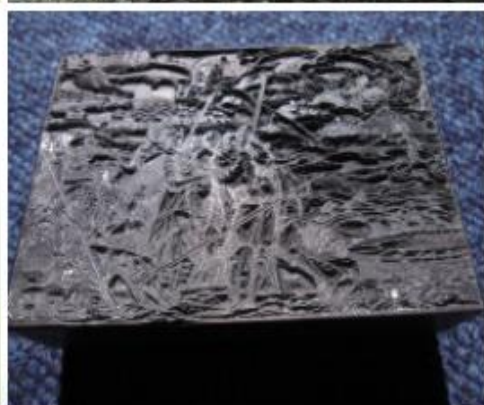
Tool able to combine:

- **Instant search** (using visual regions)
- **Metadata search** (using textual metadata, bibliographic and descriptive)
- **Comparative search** (upload your own image and search the database)

Total 10694 images. Showing images from 0 to 45

keyword to filter file list e.g. "Story of Cl"

[First](#) | [Prev](#) | [Next](#)



WISE Search Engine Demos

Explore our collection of public demos showcasing WISE's powerful search capabilities across different media types.

Search for specific images and video segments using natural language, such as "*person riding a horse jumping*". You can also search on the audio track of videos, such as by searching for "*guitar*" to find audio segments where one can hear the sound of a guitar.

WISE is open source and can be deployed on your own infrastructure.

Image Search Demos



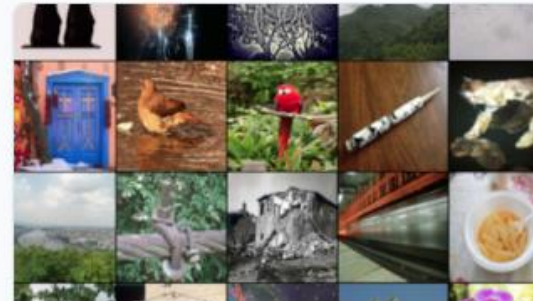
ArtUK Collection

ArtUK collection of nearly 200,000 public artworks in the UK



British Library

One million public domain images from the British Library



PASS Dataset

A collection of 1.4 million images from the PASS dataset

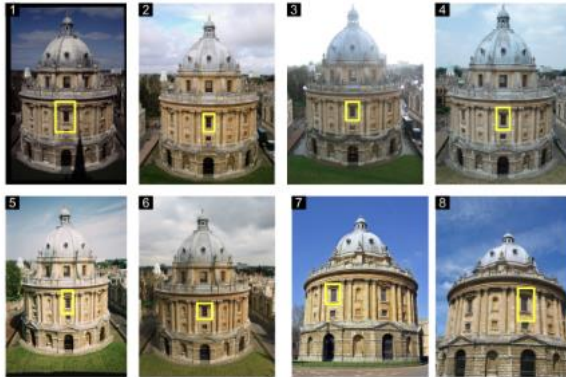
VGG Image Search Engine (VISE)

Search image collections using an image as search query ...



Search

Draw search query region
and click "Search"



Results of Visual Search



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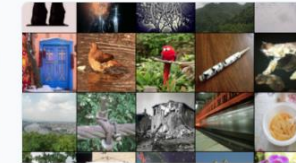
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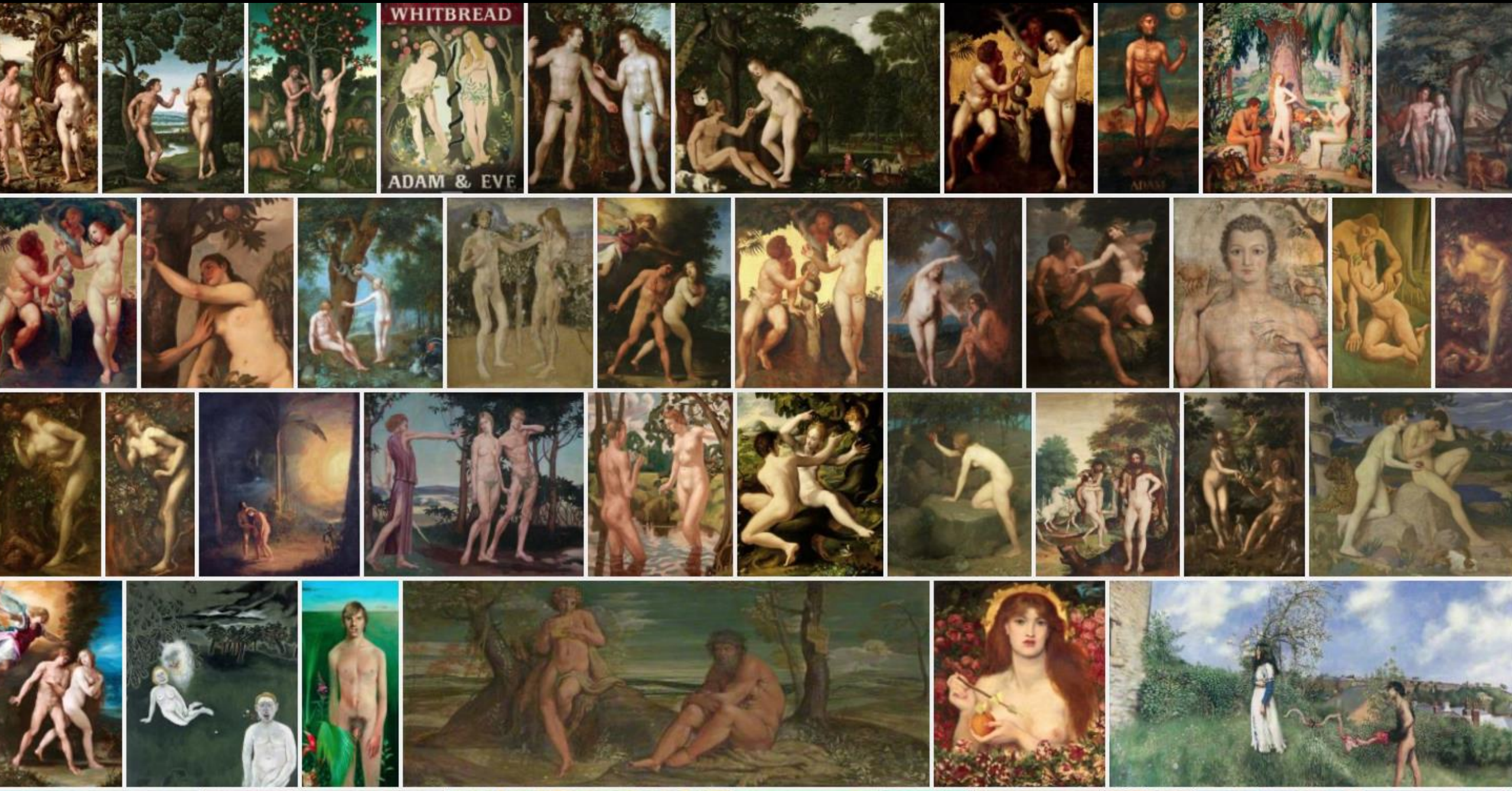
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- Analysis of the results



- Interpretation of generated data

- Metadata standardization

- Metadata standardization
- Effectiveness of the tools

- Metadata standardization
- Effectiveness of the tools
- Reliance on existing datasets

Ongoing work ...

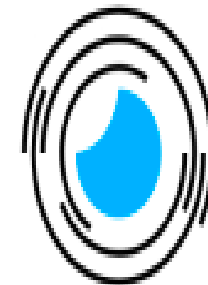
- Technical
 - Build an online interface to allow research scholars to add/edit/delete descriptive metadata
 - Advanced search mode for researchers who may have more complex search queries
 - Combine both text metadata search and visual search
 - Add new images to the collection (e.g. Netherlands, Germany)
 - Challenge: existing metadata exists in different forms (doc, csv, xml, sql)
- Research
 - Suitable bibliographic metadata source for the 16th century
 - Harmonisation of descriptive metadata (Iconclass/Warburg...?)
 - Implement structured processes to populate the database with further images and metadata (collaborations with libraries, institutions and scholars)
 - Create a network of editors and scholars working in the field who may be interested in contributing (images, metadata, ideas, feedbacks, support, etc)
 - Finding standards for the Iconographic Indexation of Images

THANK YOU

barbara.tramelli@unibz.it



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Seebibyte