

Import IIIF Manifest

Paste the URL to a IIIF Presentation Manifest. The following links will not work:

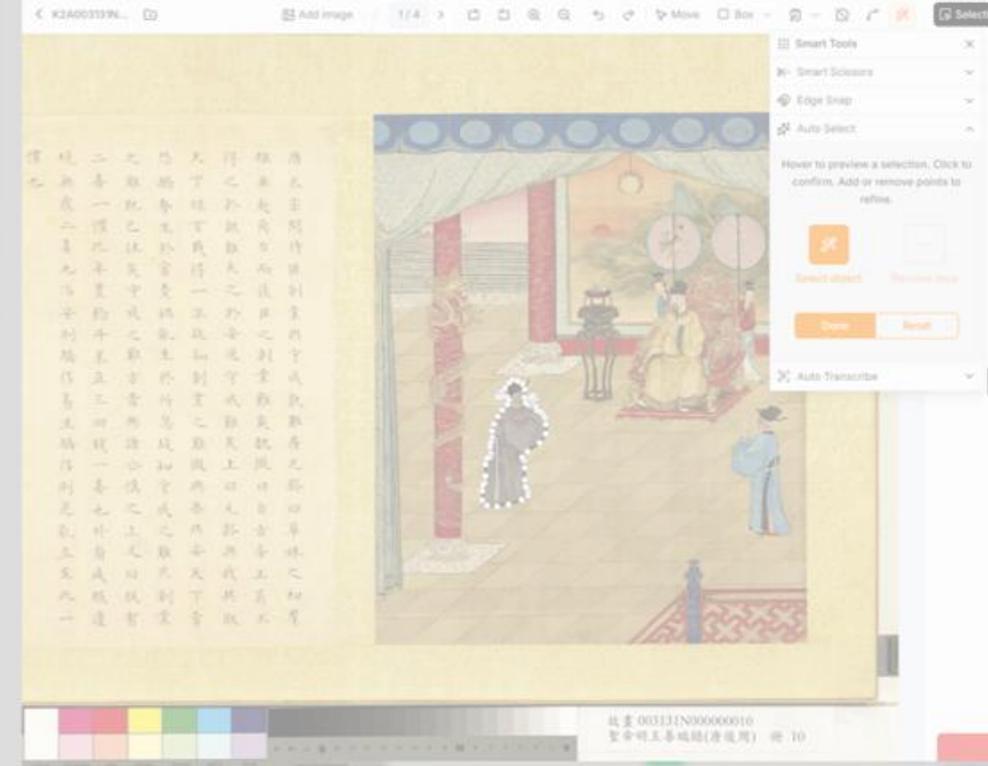
- viewer pages – e.g. pages that embed Mirador or Universal Viewer.
- links to image files – jpg, png, etc.
- IIIF Image API endpoints – ending with info.json.

<https://purl.stanford.edu/xt257vq9249/iiif/manifest>

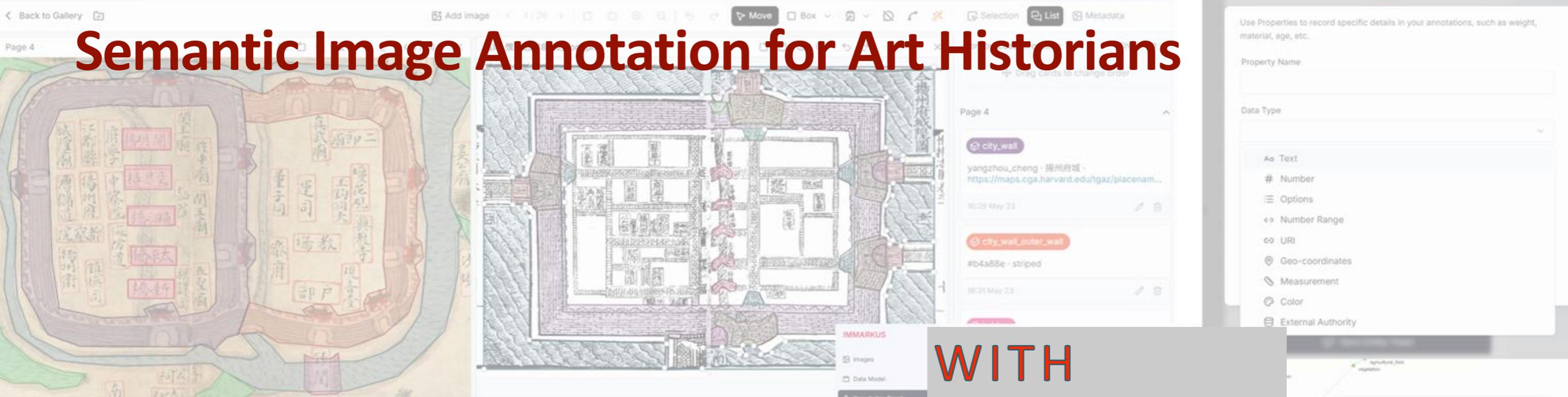
✓ (Xin hui) Sichuan quan sheng ming xi yu tu -- (新繪)四川全省明細圖

Cancel

Import



Semantic Image Annotation for Art Historians



WITH
IMMARKUS

Data Model

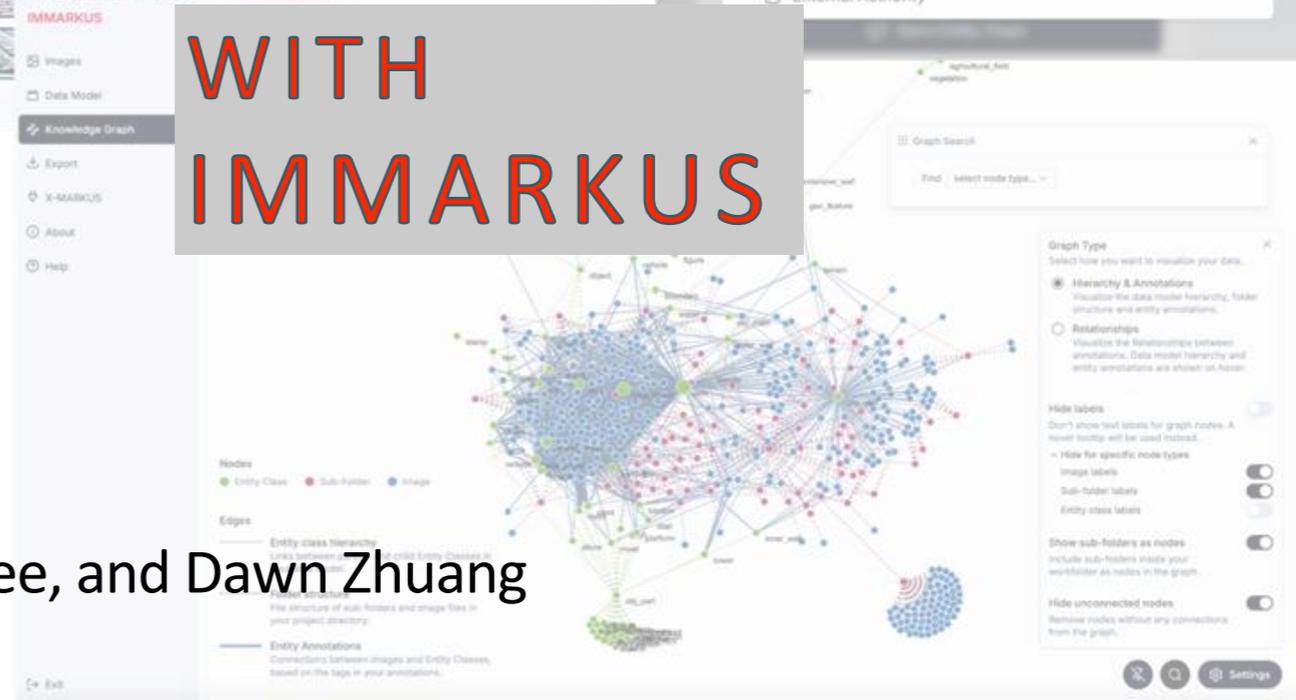
Entity Classes Relationships Image Metadata Folder Metadata

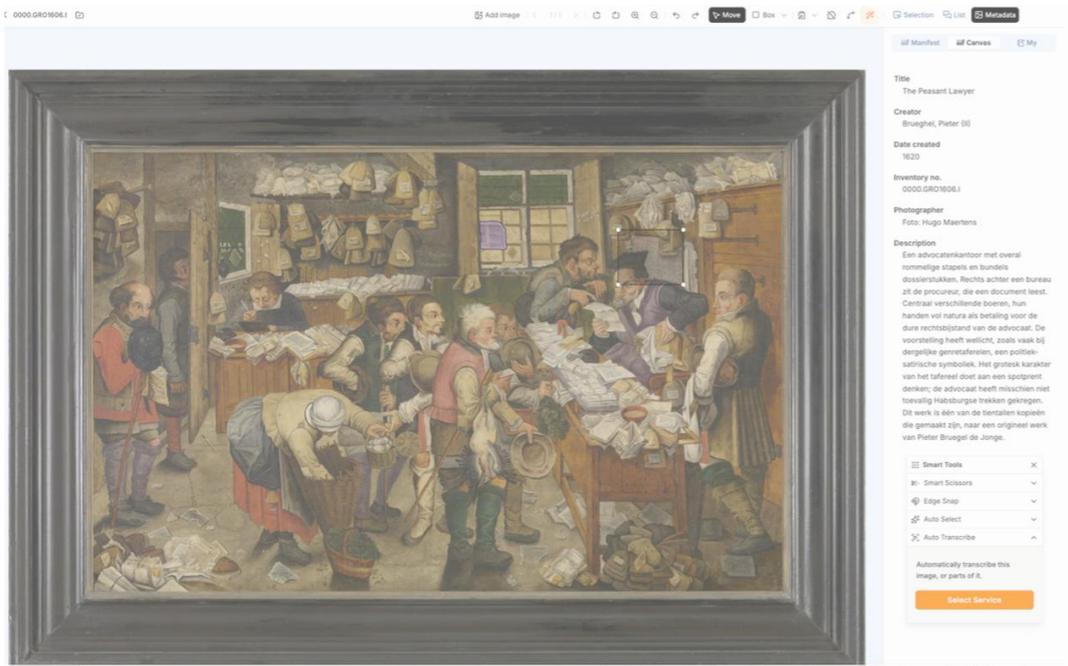
Use Entity Classes to annotate specific concepts or things with your annotations, and record details like the material of an item, or the number of legs on an animal.

Entity Class	Display Name	Description	Properties
city_wall	City Wall	A fortified structure surrounding the center of a civilian administrative unit...	city_wall, city_wall
bridge	Bridge	A structure designed to cross a physical obstacle, such as a river.	bridge, bridge
landform	Landform	Any named or unnamed features of the earth's surface.	landform, landform
water	Water	Any named or unnamed water features such as rivers, lakes, and ocean, etc.	water, water

Create New Entity Class Import Model

Hilde De Weerd, Sunkyu Lee, and Dawn Zhuang





1. Collecting Images (How and which images can I import?)



2. Annotating Images (what methods and AI models can I use for annotating image regions



and for transcribing text in images?)

IMMARKUS

- Images
- Data Model**
- Knowledge Graph
- Export
- X-MARKUS
- About
- Help

Data Model

Use Entity Classes to annotate specific concepts or things with your annotations, and record details like the the material of an item, or the number of legs on an animal.

Entity Class	Display Name	Description
location_site	site	Excavated/surveyed area
excavation	excavation	
survey area	survey	
obj_main	main object	
grave	grave	

[Create New Entity Class](#)
[Import Model](#)

Knowledge Graph

Explore connections between images and entities. Zoom and pan the graph with your mouse. Grab and pull a node to re-arrange the graph. Click a node to see more information.

Graph Type

- Hierarchy & Annotations
- Relationships

Hide labels

- Don't show text labels for graph nodes. A lower tooltip will be used instead.
- Hide for specific node types

Show sub-folders as nodes

- Include sub-folders inside your workspace as nodes in the graph.

Hide unconnected nodes

- Remove nodes without any connections from the graph.

A1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1332		塔池_高平塔志_69.jp	09503910-1903-4055-88e9-a18e75dc8406	2024-03-06T14:19:38.201Z	side_tower											outh	4
1333		塔池_高平塔志_69.jp	9097168-2d42-4197-8d35-4b4375289785	2024-03-06T14:26:52.744Z	side_tower											west	1
1334		塔池_高平塔志_69.jp	0193ac04-29f3-4525-8c0b-6427664e760d	2024-03-06T14:27:03.920Z	side_tower											west	2
1335		塔池_高平塔志_69.jp	68f96ba-ca4b-40ba-bc5c-c1be74d77e85	2024-03-06T14:27:16.178Z	side_tower											west	3
1336		塔池_高平塔志_69.jp	08b5bbaf-8524-4707-b2b9-8438b756bda5	2024-03-06T14:27:26.442Z	side_tower											west	4
1337		塔池_高平塔志_69.jp	ca326d4e-4e45-4d51-bc62-b765a8002b83	2024-03-06T14:27:43.678Z	gate_tower											west	
1338		塔池_高平塔志_69.jp	3b296a81-207b-4037-b264-ec4d950470de	2024-03-06T14:27:53.754Z	side_tower											west	5
1339		塔池_高平塔志_69.jp	5993651a-1306-4158-876c-2874798c540	2024-03-06T14:28:08.114Z	side_tower											west	6

3. What is a data model? (should I use data models; how?)

4. Visualising annotations (what is knowledge graph and how do I use it for exploring annotation data?)

5. Exporting annotations and models (what other kinds of analysis can I do with image annotations?)

Timeline

- 1:30-2:30** Introduction
 - Collecting Images
 - Annotating Images
 - Transcribing Text from Images
- 2:30-2:45** Questions and Break
- 2:45-3:45** Annotation Data Models
 - Metadata Models
 - Visualising and Querying Annotations in Knowledge Graph
 - Exporting Annotations
- 3:45-4:00** Discussion and Questions

Introduction

- What types of historical sources do you use in your research?
 - Do you work with any image sources?
 - How and why do you use these image sources in your work?
- Have you used any digital annotation platforms?
 - If so, which ones, and how was your experience with them?

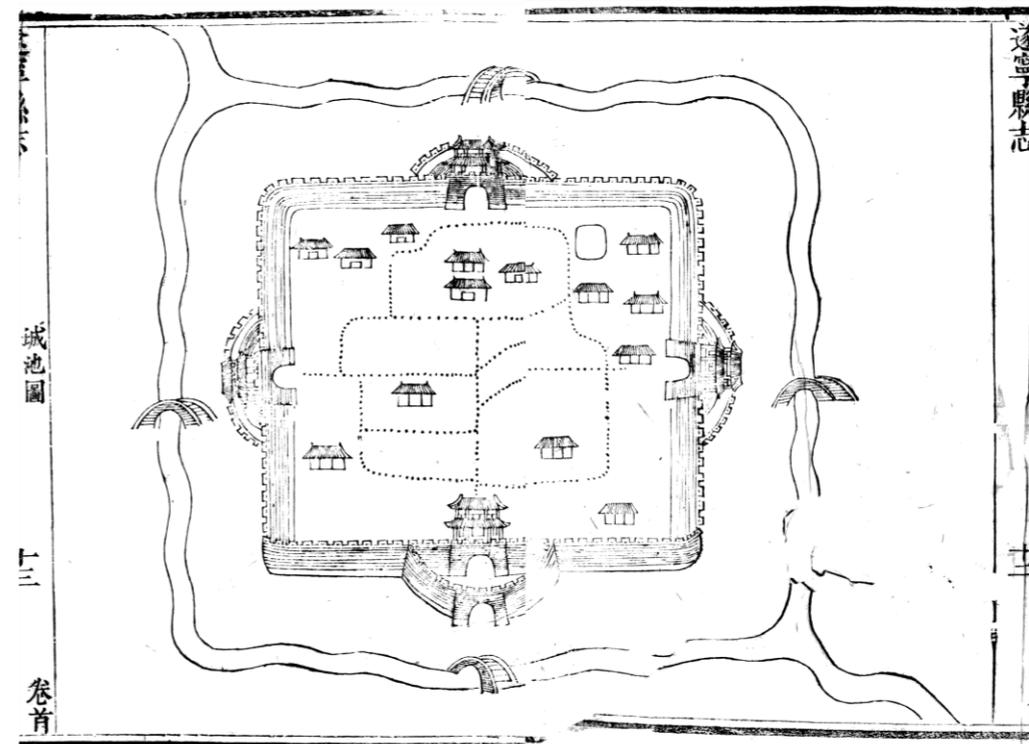
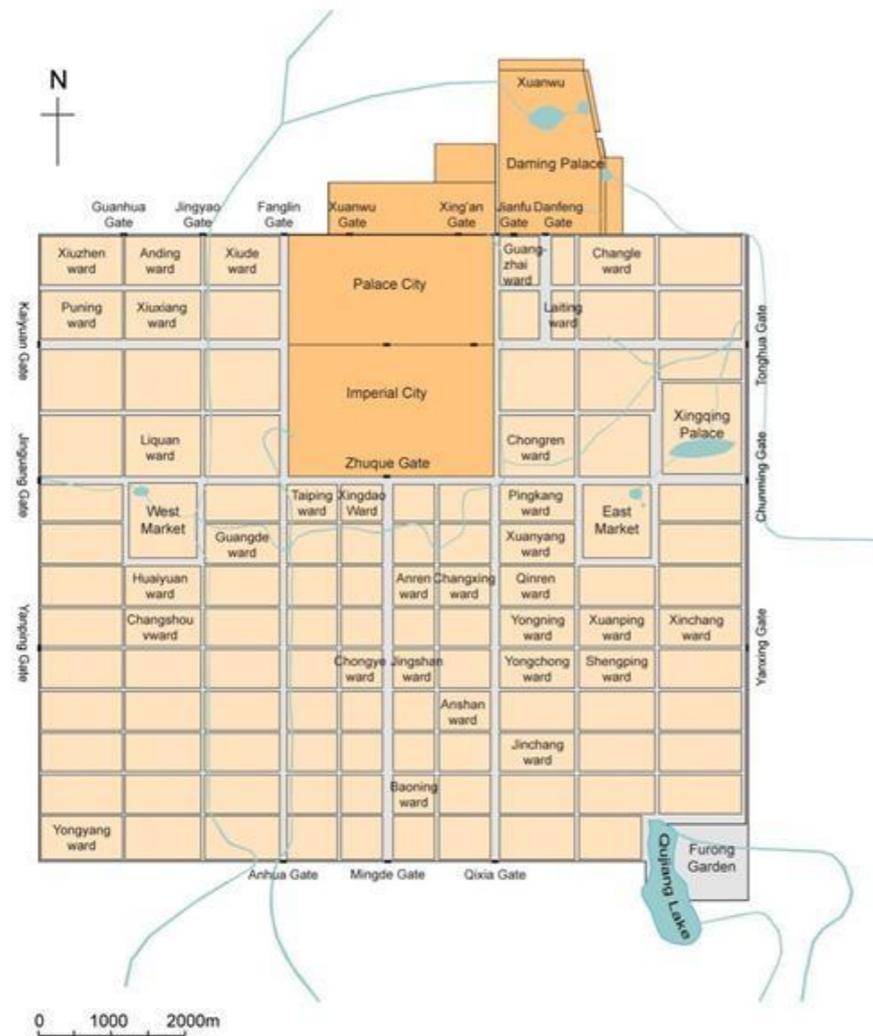
Practical Links: <https://tinyurl.com/bddd3d8s>



<https://www.infrastructurelives.eu/>

What Does a Chinese City Look Like?

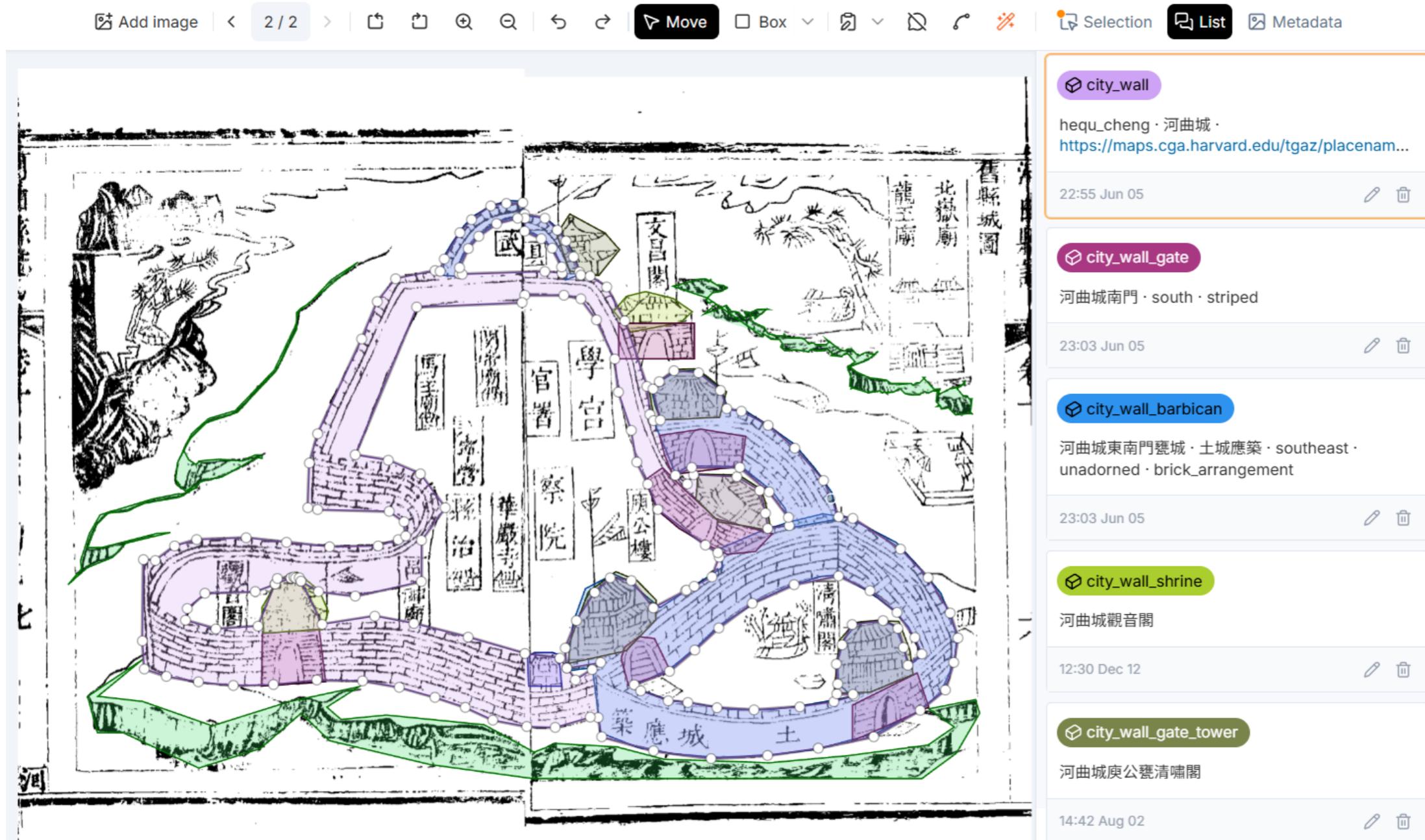
- "The fundamental feature of the Chinese imperial city is four-sided enclosure." (Steinhardt 1999, 6)



(Left) Plan of Tang Chang'an (Kiang 2014, Fig. 1)

(Right) City Map in Suining County Gazetteer (Li 1787, preface, 12b-13a)

Annotating City Maps in Local Gazetteers

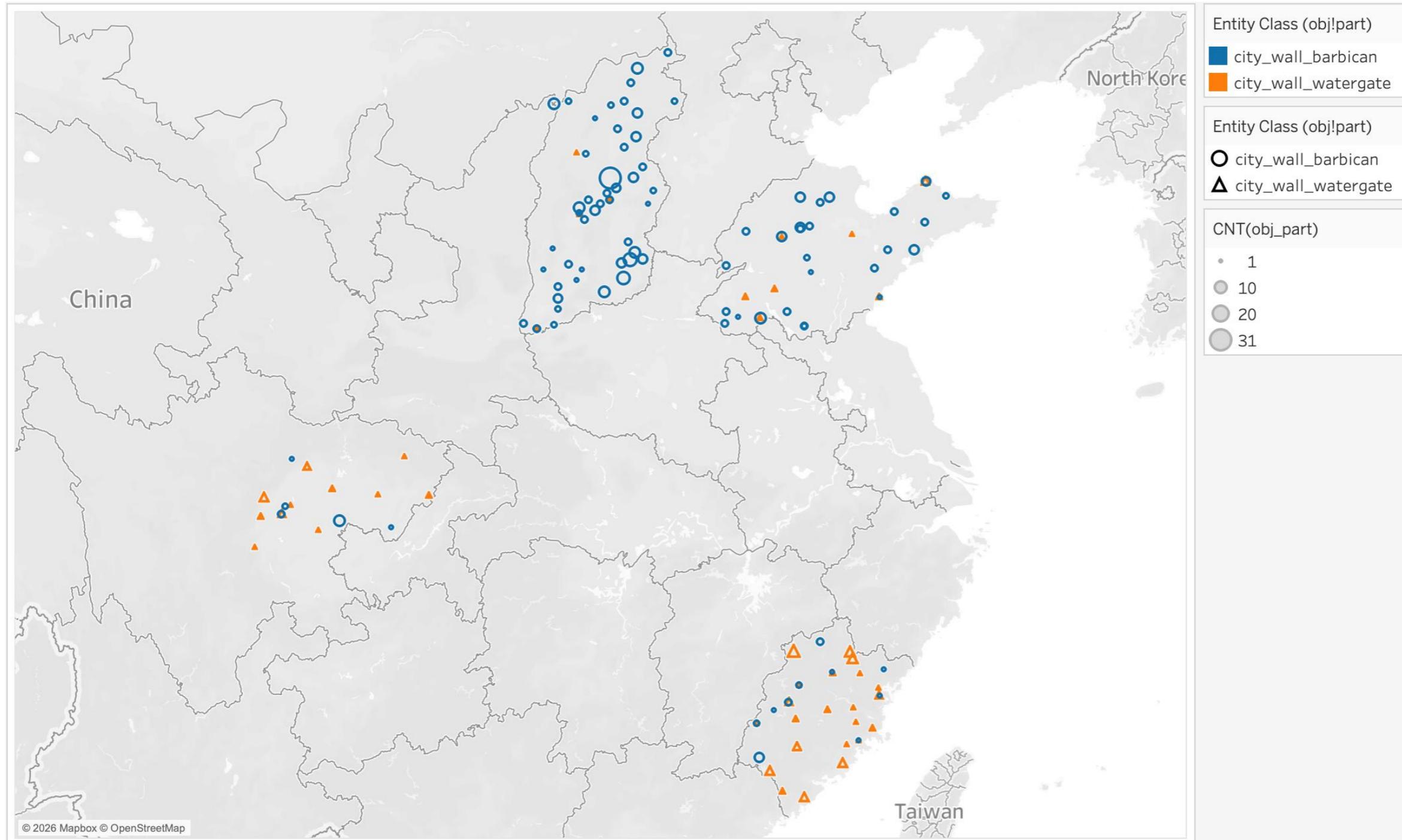


The image shows a digital interface for annotating a historical map. The map on the left is a black and white woodblock print of a city wall, with various structures and gates labeled in Chinese characters. Overlaid on the map are several colored annotations: a purple wall, a blue gate, a blue barbican, a green shrine, and a green gate tower. The right sidebar contains a list of these annotations:

- city_wall**
hequ_cheng · 河曲城 ·
<https://maps.cga.harvard.edu/tgaz/placenam...>
22:55 Jun 05
- city_wall_gate**
河曲城南門 · south · striped
23:03 Jun 05
- city_wall_barbican**
河曲城東南門甃城 · 土城應築 · southeast · unadorned · brick_arrangement
23:03 Jun 05
- city_wall_shrine**
河曲城觀音閣
12:30 Dec 12
- city_wall_gate_tower**
河曲城庾公甃清嘯閣
14:42 Aug 02

Map of Old City in *Hequ County Gazetteer* (Cao 1830, 1: 6b-7a)
Annotation by Pascal van der Bij (KU Leuven)

Visualizing Regional Cartographic Variation



Annotation by Wang Ran and Pascal van der Bij (KU Leuven)

Methodological questions



How to systematically collect, annotate, and query information from various types of visual media?



How to align and analyze text and visual sources?

IMMARKUS

< Back to Gallery

Add image 6/8 Move Rectangle Selection List Metadata

sanzhentushuo_datongche < 1/1 >

taiyuanzhigar < 6/8 >

shanxidatong < 3/7 >

gate

id
datong_southern_pass

name
southern_pass

location
datong

TGAZ
hvd_115139

descriptor
南至懷仁縣七十里

color

pattern
plain

Hilde De Weerd, Rainer Simon, Lee Sunkyu, Iva Stojević, Dawn Zhuang, Meret Meister, and Xi Wangzhi. IMMARKUS: Image Annotation in X-MARKUS. 2024-. immarkus.xmarkus.org

05 Annotating Images

fonziedw edited this page 4 days ago · [105 revisions](#)

To add annotations to your images, click the subfolder containing the images you want to work with in the image gallery. This will open the images in the folder, and you can start annotating.

Overview

The following functionalities are available in the annotation mode (numbers correspond to those in **Figure 1**)

1. [Add an image](#)
2. Browse the images in the same subfolder / click arrows to display the previous or next image
3. Rotate image 90° to the left or to the right
4. Zoom in or zoom out of an image
5. Undo/redo
6. Move (pan) across the image
7. [Draw a shape](#) (select box, polygon, ellipse, or path)
8. Copy image snippet (exact shape or bounding box) to clipboard
9. Hide annotations
10. Add relation between two entities
11. Smart tools for selecting irregular shapes or automatically transcribing an image (or parts of it) with AI models
12. See details of the currently selected annotation
13. List your annotations
14. Add or edit [individual image metadata](#)

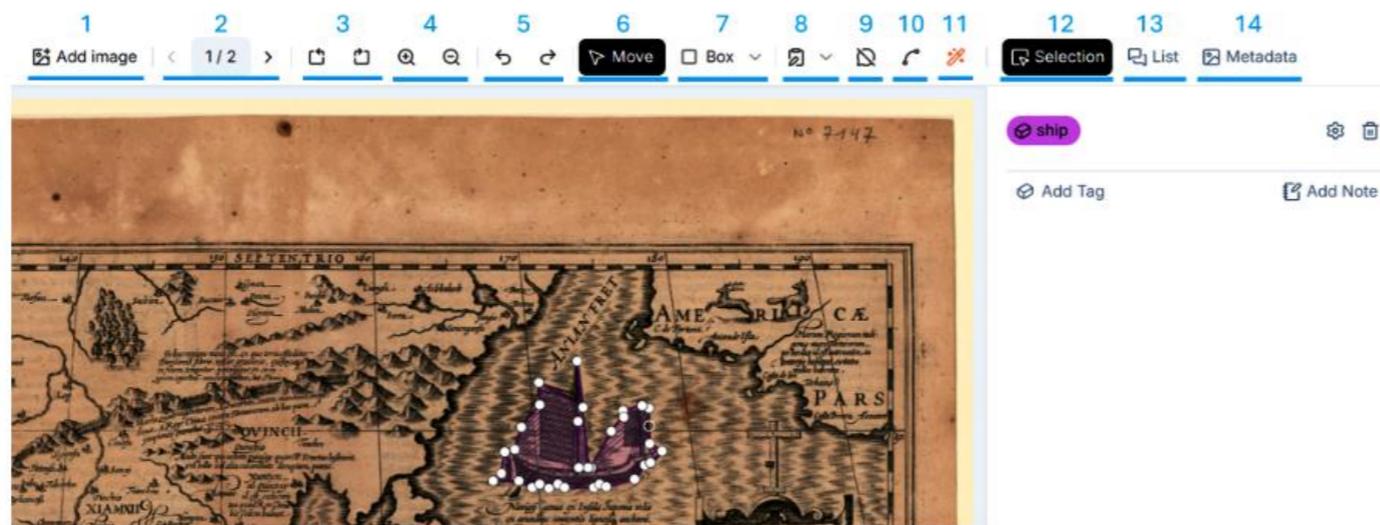


Figure 1. Workspace in Annotation Mode

Pages **11**

- Home
- 01 Overview
- 02 Importing Images
- 03 The Interface
- 04 Designing a Data Model
- 05 Annotating Images
- 06 Working with Metadata
- 07 Exploring Data in Knowledge Gr...
- 08 Exporting Data
- Recommended IIF Image Sources
- Troubleshooting IIF Manifest Impo...

Clone this wiki locally

<https://github.com/rsimon/immarku>

Hilde De Weerdt, Rainer Simon, Dawn Zhuang, Lee Sunkyu, and Iva Stojević. Image Annotation in IMMARKUS Wiki. 2024-. github.com/rsimon/immarkus/wiki

Preview
2025
Volume 19 Number 4

[Preview](#) | [XML](#) | [PDF](#) | [Print](#)

Contextual Semantic Text and Image Annotation in the MARKUS Environment

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Abstract

In this article we discuss the rationale behind the design of [COMARKUS](#) and [IMMARKUS](#), two browser-based annotation services for the creation of complex semantic text- and image annotations, in the form of both individual entities or tags with properties and clusters of entities or tags also with their own set of properties. We first discuss the challenges we faced with existing text and image annotation platforms, using as our case a longue-durée social history of Chinese material infrastructures including city walls, roads, and bridges. We explain how methodological design and redesign constituted an urgent need issuing from both theoretical and empirical findings. In the other two sections we set out how [COMARKUS](#) and [IMMARKUS](#) were designed to address those challenges and facilitate an event- or cluster-based cross-media history of infrastructures. Throughout we aim to illustrate the more general use of [COMARKUS](#) and [IMMARKUS](#) annotation methods and show how annotation results can be visualized and analyzed in the cross-media information retrieval platform [X-MARKUS](#) and spatial analysis service [MUNDA](#), or exported for analysis in a broad range of data analytical environments. We also discuss how machine learning and Generative AI are included in these services and can be made part of a humanities research flow aimed at the contextualization of research data. We see this methodological design as part of a broader effort to face the challenge of the contextualization of data, focusing on the semantic modeling of image and text sources, the traceability of image regions and textual entity and data cluster locations, and the uses of piece and source metadata in data analytics.

De Weerdt, Hilde, Brent Ho, Rainer Simon, Lee Sunkyu, Sander Molenaar, Xi Wangzhi, Dawn Zhuang, Iva Stojević, Tu Hsieh-Chang, Taylor Zaneri, Lin Nung-yao, and Meret Meister. [“Contextual Semantic Text and Image Annotation in the MARKUS Environment.”](#) *Digital Humanities Quarterly* 19.4 (2025).

1. Collecting Images

Manuscript Maps



Import IIIF Manifest

Paste the URL to a IIIF Presentation Manifest. The following links will not work:

- viewer pages – e.g. pages that embed Mirador or Universal Viewer.
- links to image files – jpg, png, etc.
- IIIF Image API endpoints – ending with info.json.

<https://purl.stanford.edu/xt257vq9249/iiif/manifest>

✓ (Xin hui) Sichuan quan sheng ming xi yu tu -- (新繪)四川全省明細輿圖

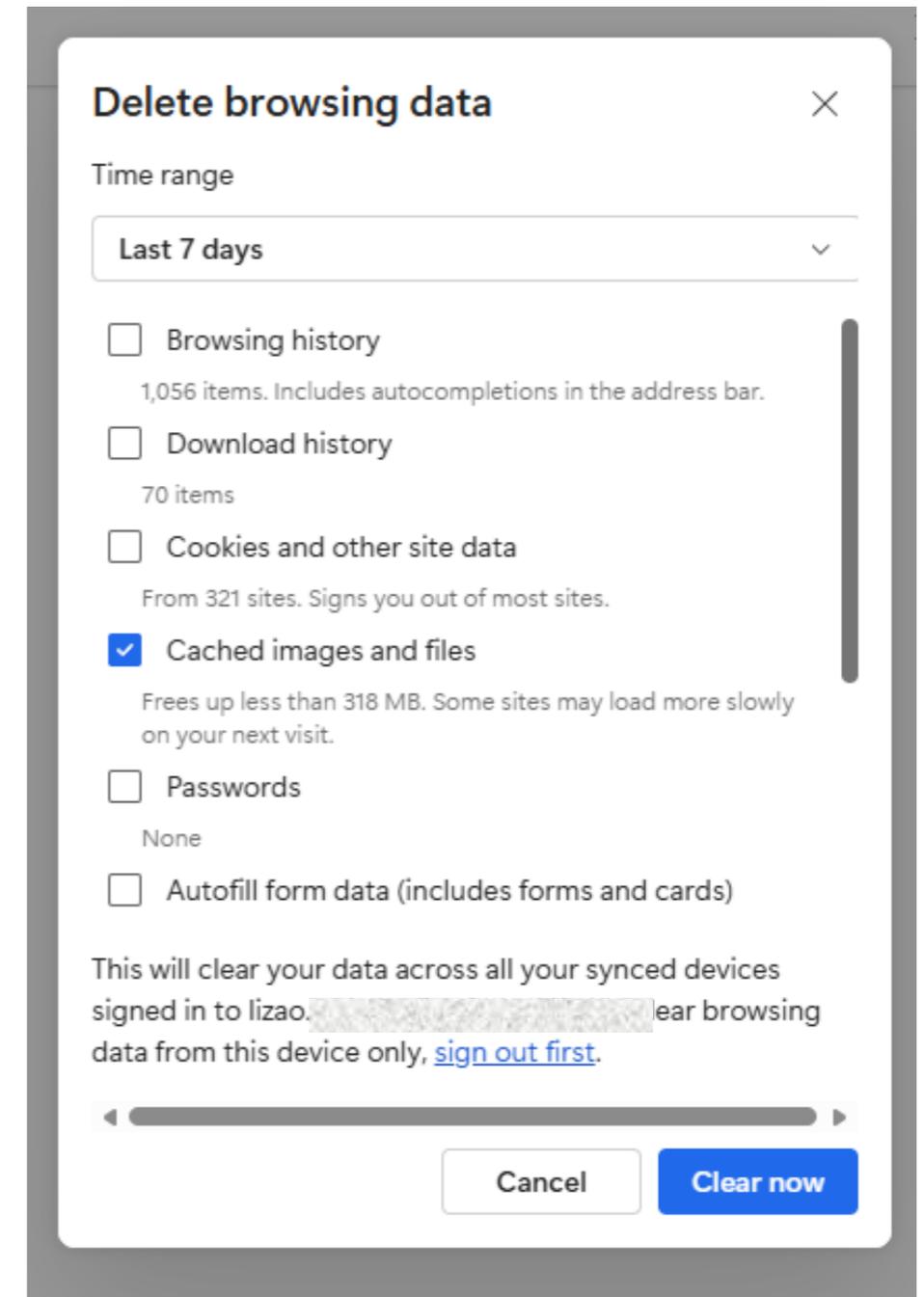
Cancel

Import

Before We Start

1. Open your browser and clear your browser cache

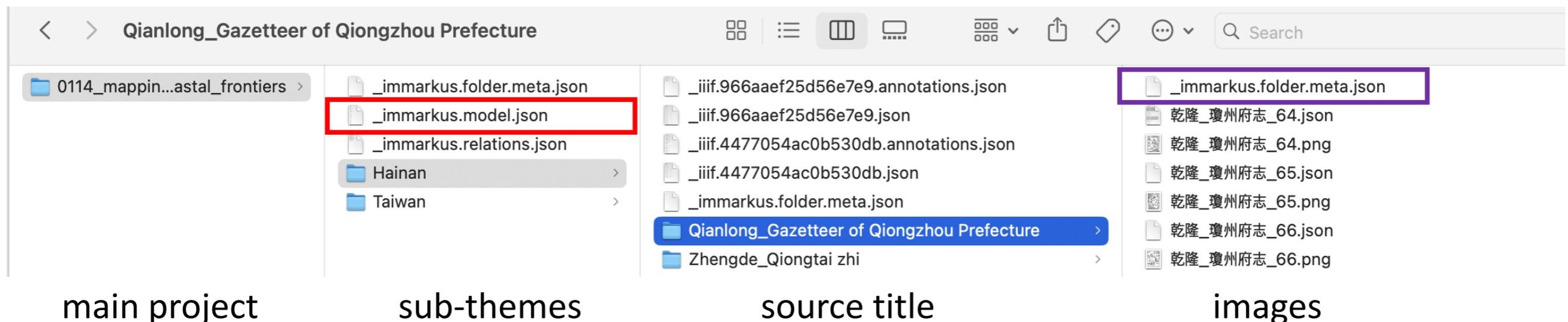
- On **Chrome** : Go to **: > Settings > Privacy and security > Delete browsing data** →
Select **Cached images and files** > Click **Delete data** , then restart the browser
- On **Edge** : Go to **⋮ > Settings > Privacy and security > Clear browsing data** →
Select **Cached images and files** > Click **Clear now**, then restart the browser



Before We Start

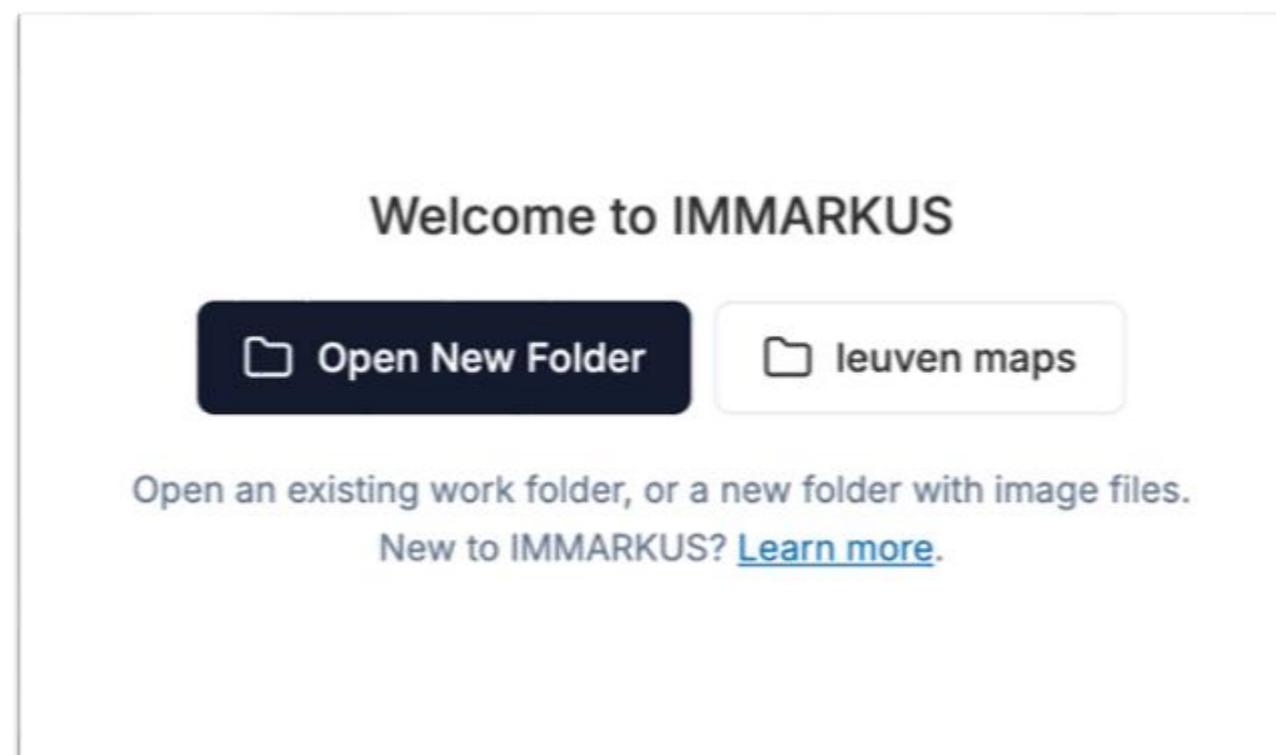
2. Prepare a **folder** on your computer

- Create an **(empty) folder** even if you plan to use only IIF images
- This folder may also contain **locally saved image files (.jpeg or .png)** if you use both IIF and local images
- In case you use locally saved images, you may organize images into **one or more subfolders** based on shared features (e.g. same publication)



Importing a Folder

1. Go to **IMMARKUS** immarkus.xmarkus.org
 - Use **Chrome** or **Edge**
2. Click **Open New Folder** and select your image folder
3. Click **Edit Files** to allow IMMARKUS to edit the files



IMMARKUS

- Images**
- Data Model
- Knowledge Graph
- Export
- X-MARKUS
- About
- Help

Catographic ethnography >

northern frontier

0 images · Metadata · Import IIIF · Hide Unannotated

- sanzhentushuo_painted atlas_juan 2**
11 Images
- sanzhentushuo_woodbloc...
6 Images
- yansui donglu dilutu
10 Images

IMMARKUS

- Images**
- Data Model
- Knowledge Graph
- Export
- X-MARKUS
- About
- Help

Catographic ethnography > northern frontier >

sanzhentushuo_painted atlas_juan 2

11 images · Metadata · Import IIIF · Hide Unannotated

- 
大同分巡冀北道轄不屬路圖...
2,246 × 1,687
- 
威遠城圖_58.jpg
2,246 × 1,687
- 
懷仁城圖_81.jpg
2,246 × 1,687
- 
廣昌城圖_9.jpg
2,246 × 1,687
- 
山陰城圖_79.jpg
2,246 × 1,687
- 
廣靈城圖_7.jpg
2,246 × 1,687

Importing IIIF URLs

Manuscript Maps



Import IIIF Manifest

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<https://purl.stanford.edu/xt257vq9249/iiif/manifest>

✓ (Xin hui) Sichuan quan sheng ming xi yu tu -- (新繪)四川全省明細輿圖

Cancel

Import



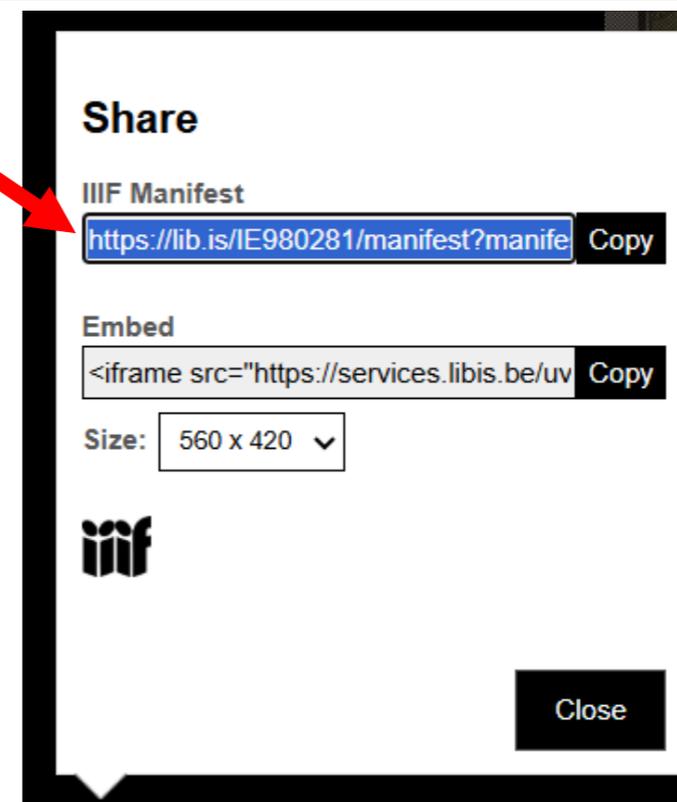
What is IIIF?

- [International Image Interoperability Framework](#)

- A set of open standards for delivering high-quality, attributed digital objects online at scale

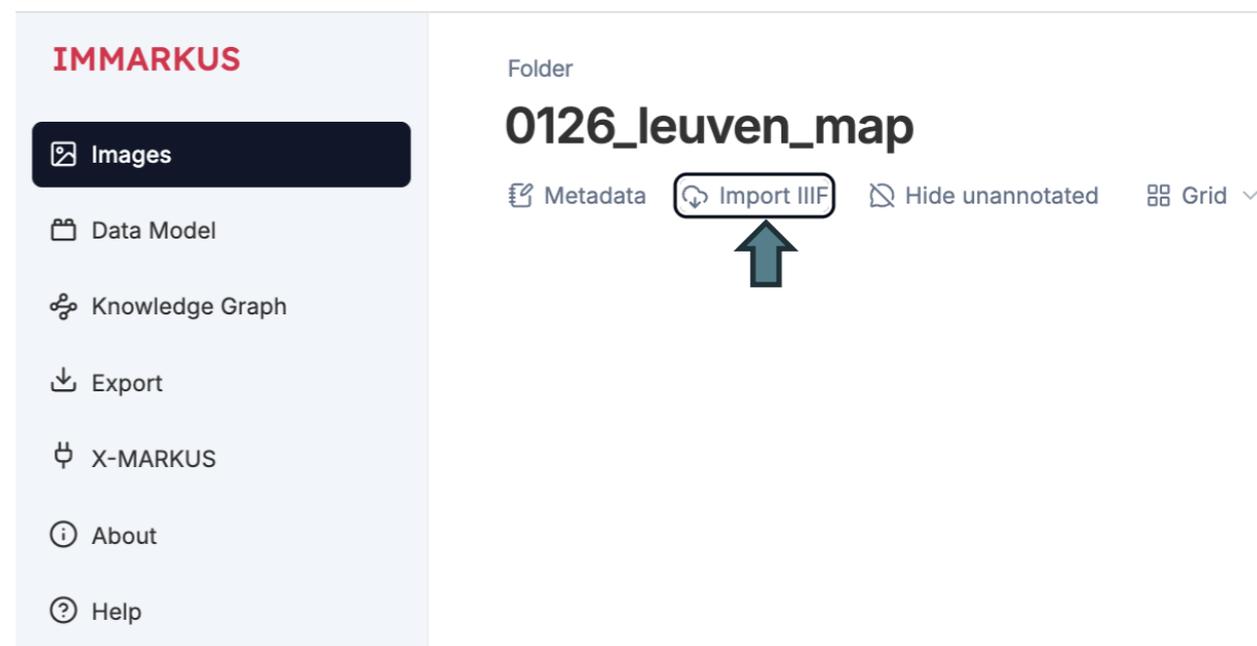
- Key advantages

- Enhanced access to high-quality images
- Integration of sources from multiple collections



Importing IIF URLs

1. Click **Import IIF**
2. Paste the URL to the dialogue box
3. Click **Import**

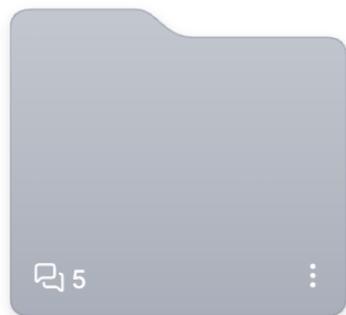


Importing IIF URLs

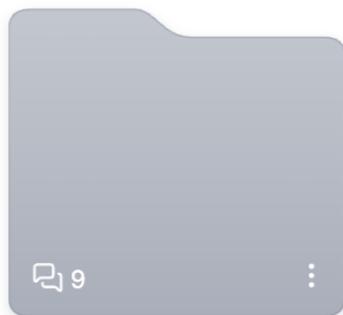
0114_mapping_coastal_frontiers >

Taiwan

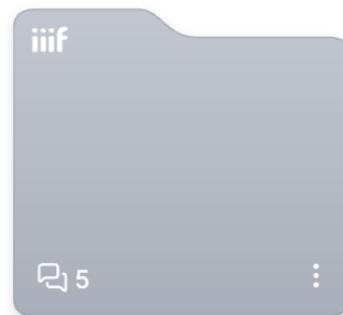
[Metadata](#) [Import IIF](#) [Hide unannotated](#) [Grid](#) ▾



Carte de ce qui appartient...
1 IIF



Taiwan qianhou shantu_LOC
1 IIF



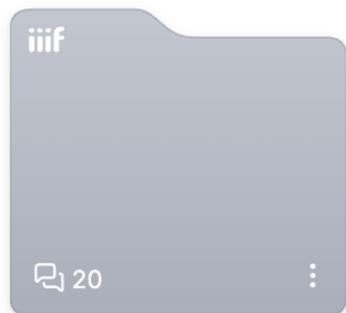
Bodleian Library MS.Selde...
11 Canvases



Bodleian Library Film
1,818 x 1,228

- [Metadata](#) >
- [Open Canvas](#)
- [Other IIF Viewers](#) >
- [Delete](#)

- [Manifest Metadata](#)
- [Canvas Metadata](#)



BnF, département Cartes ...
3 Canvases

[{} IIF](#) [My](#) ✕

Homepage

[View on Digital Bodleian](#)

Title

[Formosa Strait by Anon. Dutch, early 18th century]

Shelfmark

Bodleian Library Filmstrip Roll 235.5, frame 17

Language

Dutch

Date Statement

early 18th century

Description

Portolan chart joining three places of interest to the Dutch: Canton, Taiwan, and Amoy

Extent

1015 x 710 mm

Extent

35mm slide

Collection

Maps and Atlases

Importing IIF URLs

IMMARKUS

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Data Model

Knowledge Graph

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X-MARKUS

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practice > **iiif** Andreæ Vesalii Brvxellens... >

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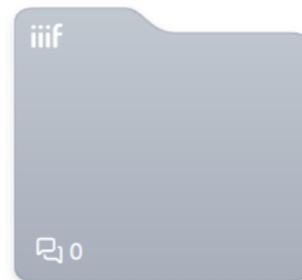
Metadata · Other IIIF Viewers · Hide unannotated · Grid



Binding



Title



Ad divvm Carolvm Qvintvm
... Andreæ Vesalii ... Præfatio



Ioanni Oporino ... amico
chariBimo suo



Liber primvs, iis qvæ
vniversvm corpus sustinent
ac suffulciunt, quibusq;
omnia stabiliuntur &
adnascuntur, dedicatus [The
bones and cartilages]



Liber secvndvs, ligamentis
ossa cartilaginesq; inuicem
committentibus, & musculis
uoluntariorum motuum
instrumetis, dedicatus ...
[The ligaments and muscles]



Liber tertivs, quo venarvm
arteriarvmqve per
uniuersum corpus series
describitur ... [The veins and
arteries]



Liber qvartvs, nervis
proprivs, ac ipsi peculiares
figuras in caput, quibus
præcipuè conueniunt, fronte
exhibens [The nerves]



Liber qvintvs, organis
nvtritioni qvæ cibo potuq;
sit, & dein propter partium
connexum ac uiciniam
instrumentis generationi
famulantibus dedicatus ...
[The organs of nutrition and]



Liber sextvs, cordi ipsi'qve
famvlantibus organis
dedicatus ... [The heart and
associated organs]



Liber septimvs, cerebro
principis animalis'qve
facultatum sedi, & sensuum
organis dedicatus ... [The
brain]



Binding

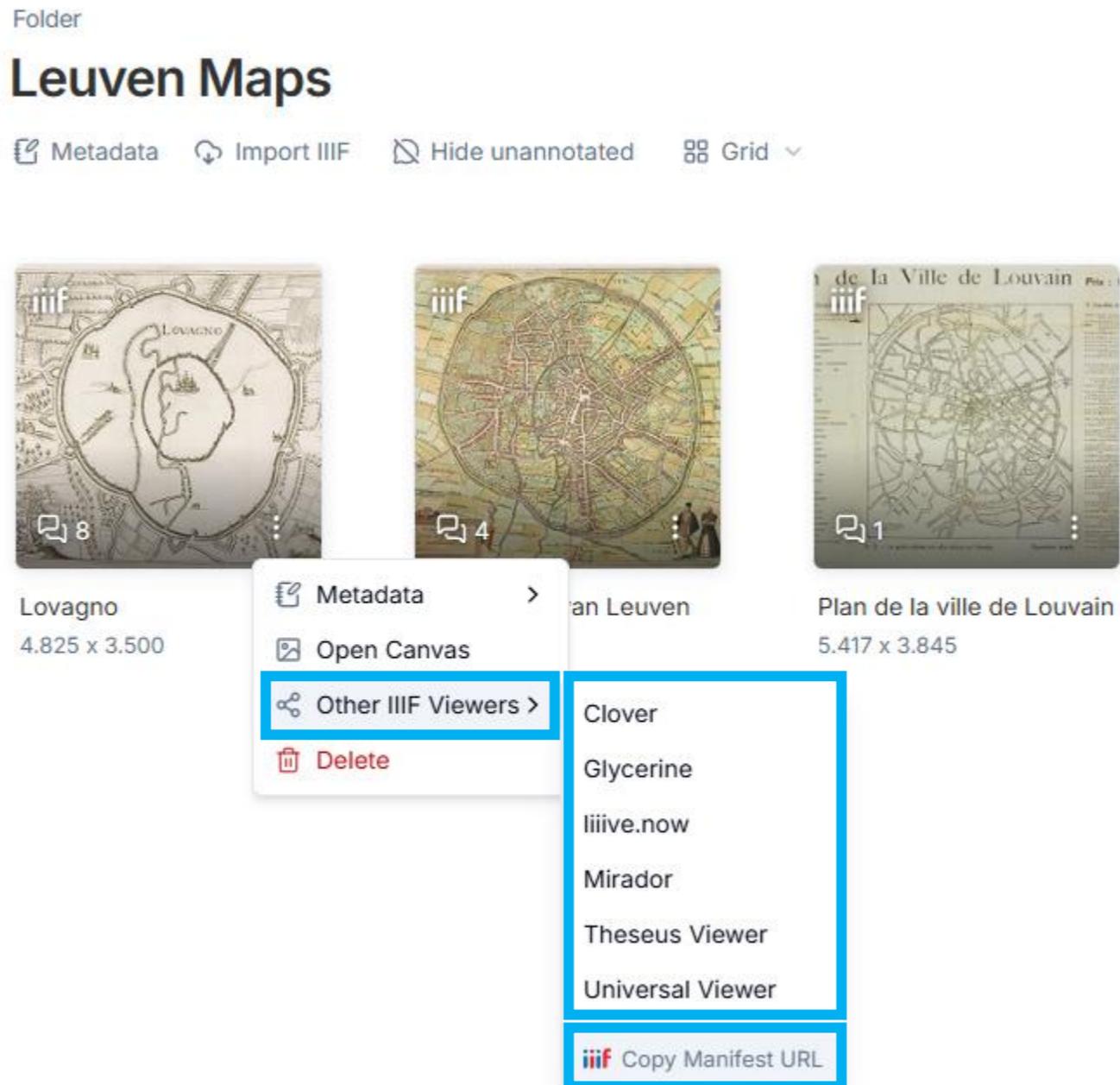
Tip

You can also open an imported IIF manifest in other viewers or copy its manifest URL to validate it and compare its rendering across platforms

Folder

Leuven Maps

Metadata Import IIF Hide unannotated Grid



Lovagno
4.825 x 3.500

an Leuven

Plan de la ville de Louvain
5.417 x 3.845

- Metadata
- Open Canvas
- Other IIF Viewers
 - Clover
 - Glycerine
 - liive.now
 - Mirador
 - Theseus Viewer
 - Universal Viewer
 - Copy Manifest URL
- Delete

Practice 1: Importing IIF URLs

- Visit the digital collections of the Bodleian Libraries, locate one or more IIF resources, and import them into IMMARKUS
<https://digital.bodleian.ox.ac.uk/search/>

The screenshot shows the Digital Bodleian website interface. At the top left is the 'DIGITAL BODLEIAN' logo. Navigation links for 'SEARCH', 'BROWSE', and 'ABOUT' are in the center, with a 'Log in' button on the right. A yellow banner below the navigation bar states: 'Technical issues are affecting Digital Bodleian. Images may be slow to load, and some features may not work as expected. We are working on a resolution.' Below this is a search bar with the placeholder text 'Enter keywords' and a search icon. To the right of the search bar is an 'ADVANCED SEARCH' button. The main content area shows a list of search results. On the left, there is a sidebar with 'Object Type' filters: Archives and Manuscripts (10422), Music (4267), Printed Books (2690), Portraits, Prints and Drawings (1973), Ephemera (994), Maps (828), Periodicals (417), Bindings (291), and Photographs (229). The main results area shows '21,640 items' and a list of results. The first result is 'All Souls College Hovenden I', with a thumbnail image of a map. The title is 'All Souls College Hovenden I' and the subtitle is 'The Hovenden Maps: All Souls College Estates: Volume I'. It includes a date range of '1591-1604', a location of 'England, Oxford', and authors 'Clerke, Thomas | Langdon, Thomas | +2'. A green checkmark indicates it is 'Fully digitized'. There is also a 'Save search' button and a '20 per page' dropdown menu.

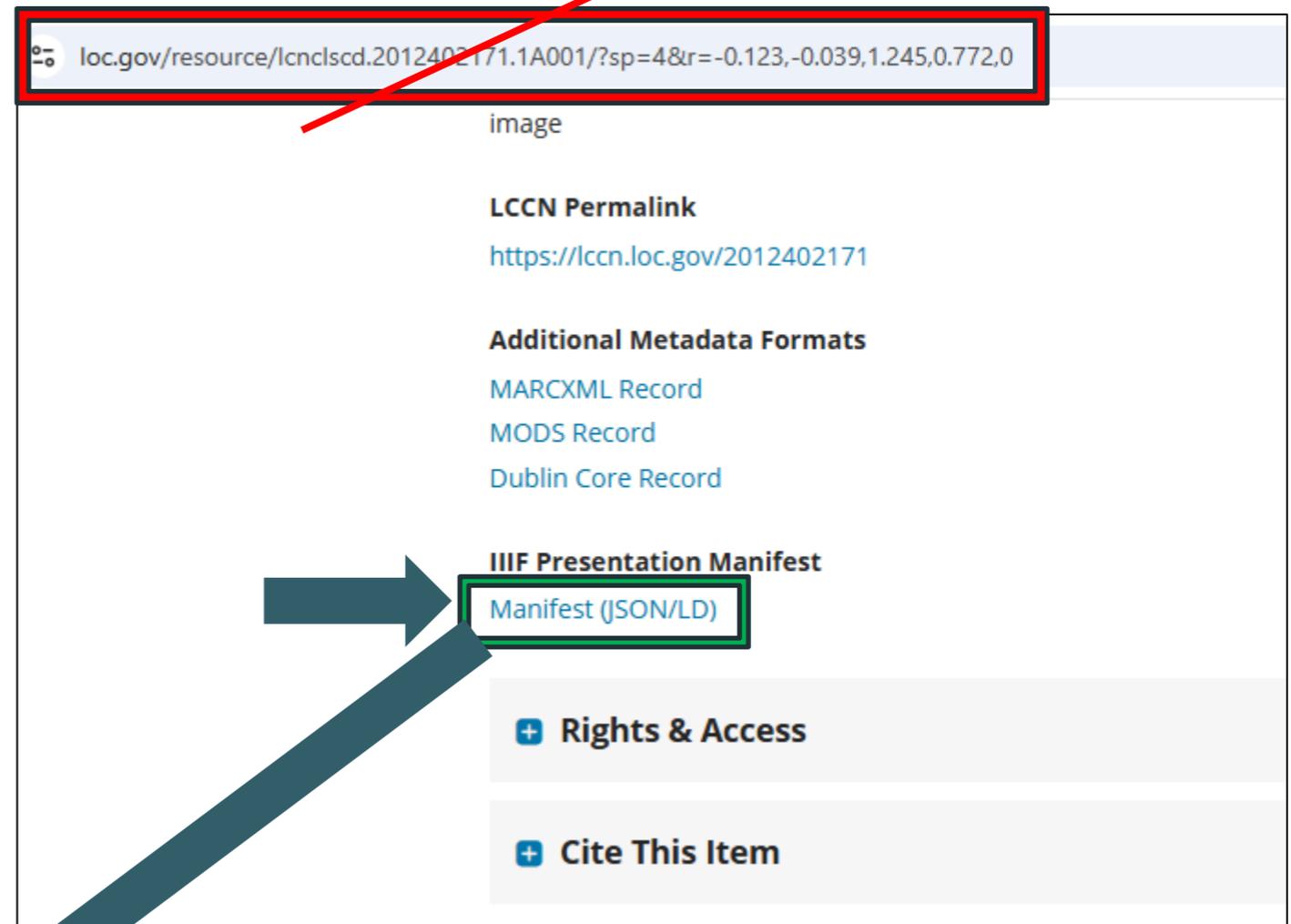
- Find and Paste a IIIF URL: ending with **/manifest** or **/manifest.json**

The screenshot shows the Digital Bodleian website interface. At the top, the browser address bar contains the URL `digital.bodleian.ox.ac.uk/objects/acd9492e-25fa-4286-9fe6-e0cf2fc28106/`, which is highlighted with a red box. Below the address bar, the website header includes the Digital Bodleian logo, navigation links (SEARCH, BROWSE, ABOUT), and a login button. A yellow banner indicates technical issues. The main content area displays 'All Souls College Hovenden I' with a large map image. A dropdown menu is open, showing options: 'View in Mirador for advanced features', 'View in Universal Viewer', and 'View IIIF manifest'. The 'View IIIF manifest' option is highlighted with a green box. A blue arrow points from this option to a new browser address bar at the bottom, which shows the IIIF manifest URL: `iiif.bodleian.ox.ac.uk/iiif/manifest/acd9492e-25fa-4286-9fe6-e0cf2fc28106.json`, also highlighted with a green box.

```
{"@context":"http://iiif.io/api/presentation/2/context.json","@id":"https://iiif.bodleian.ox.ac.uk/iiif/manifest/acd9492e-25fa-4286-9fe6-e0cf2fc28106.json","@type":"sc:Manifest","label":"All Souls College Hovenden I","description":"The Hovenden Maps: All Souls College Estates: Volume I","metadata":[{"label":"Homepage","value":"<span><a href='\"https://digital.bodleian.ox.ac.uk/objects/acd9492e-25fa-4286-9fe6-e0cf2fc28106/\">View on Digital Bodleian</a></span>\"},{\"label\":\"Related Resource\",\"value\":\"<a href='\"http://library.asc.ox.ac.uk/hovenden/\">The Hovenden Maps - The Library, All Souls College</a>\"},{\"label\":\"Title\",\"value\":\"The Hovenden Maps: All Souls College Estates: Volume I\"},{\"label\":\"Shelfmark\",\"value\":\"All Souls College Hovenden I\"},{\"label\":\"Cartographer\",\"value\":\"Clerke, Thomas\"},{\"label\":\"Cartographer\",\"value\":\"Langdon, Thomas\"},{\"label\":\"Patron\",\"value\":\"Hovenden, Robert\"},{\"label\":\"Patron\",\"value\":\"All Souls College, Oxford\"},{\"label\":\"Date Statement\",\"value\":\"1591-1604\"},{\"label\":\"Place of Origin\",\"value\":\"England, Oxford\"},{\"label\":\"Description\",\"value\":\"Estate maps of All Souls College, commissioned by
```

Library of Congress

- IIF manifests usually have in their URL structure: **/manifest** or **/manifest.json**
- Go to [IMMARKUS Wiki](#) for more tips



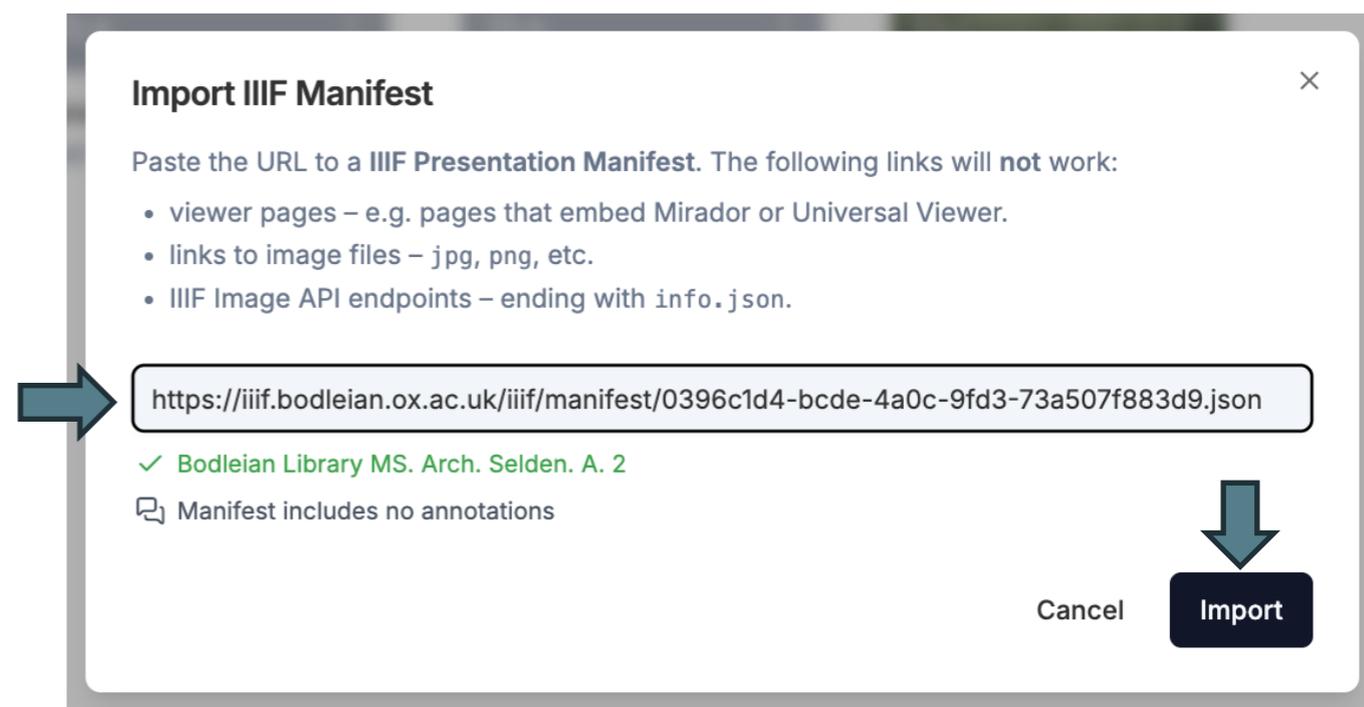
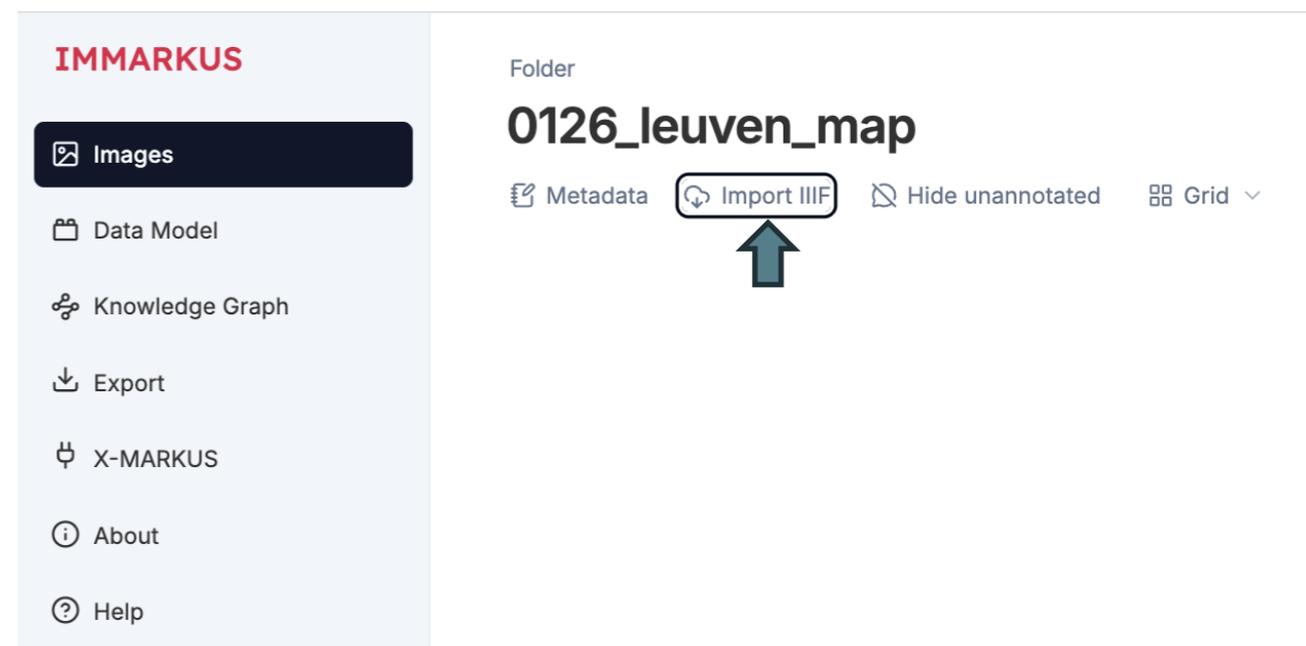
The screenshot shows a web browser window with the URL `loc.gov/resource/lcnclscd.2012402171.1A001/?sp=4&r=-0.123,-0.039,1.245,0.772,0` in the address bar. The page content includes a red box around the URL, a blue arrow pointing to the "IIF Presentation Manifest" link, and a green box around the "Manifest (JSON/LD)" link. Below this are sections for "Rights & Access" and "Cite This Item".



The screenshot shows a web browser window with the URL `loc.gov/item/2012402171/manifest.json` in the address bar. The page content displays a JSON manifest file with a "Pretty-print" checkbox. The JSON content includes metadata for a painting, such as the title "Taiwan Fan She Feng Su", the author "Hummel, A. W. & Chinese Rare Book Collection", and the URL "https://www.loc.gov/item/2012402171/manifest.json".

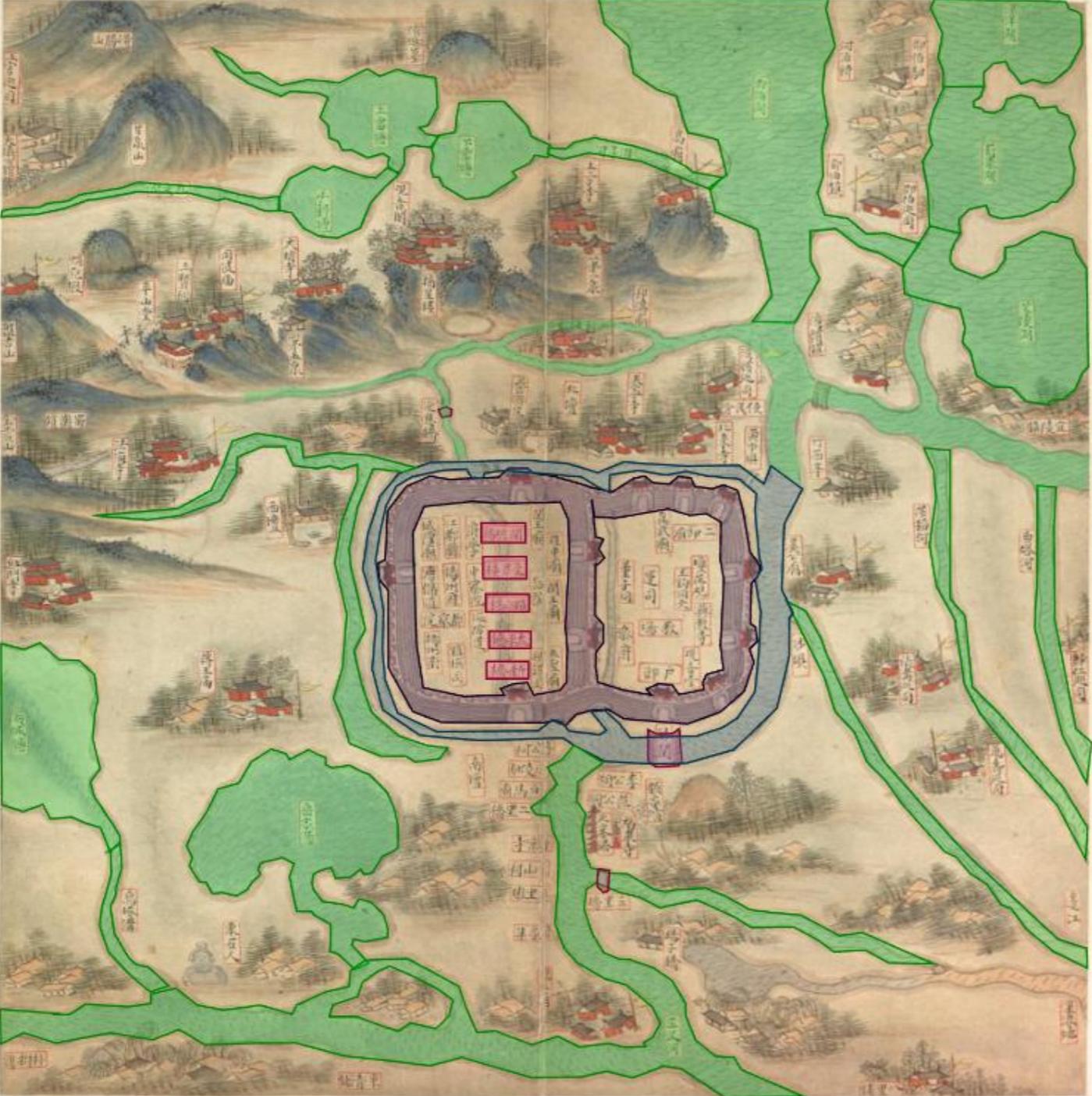
Importing IIF URLs

1. Click **Import IIF**
2. Paste the URL into the dialogue box
3. Click **Import**



2. Annotating Images

2



Annotations on the map include:

- city_wall** (purple)
- city_wall_outer_wall** (blue)
- bridge** (pink)
- water** (green)

Annotation details:

- city_wall** and **city_wall_outer_wall**: yangzhou_cheng · 揚州府城 · <https://maps.cga.harvard.edu/tgaz/placenam...> · 16:31 May 23
- bridge**: yangzhou_ying'en_qiao · 迎恩橋 · unadorned · #9d9080 · basic bridge · extramural · no · 10:50 May 23
- bridge**: yangzhou_chaoguan_qiao · 鈔關 · striped · #816f59 · floating bridge · extramural · no · 10:01 May 28
- water**: yangzhou_lv yang_hu · 淶洋湖 · lake · extramural · 11:00 May 23
- water**: yangzhou_fengsai_hu · 葑塞湖 · lake · extramural · 11:01 May 23

Image Gallery

IMMARKUS

 Images

 Data Model

 Knowledge Graph

 Export

 X-MARKUS

 About

 Help

Folder

Leuven University Hall

 Metadata

 Import IIIIF

 Show unannotated

 Grid 



véritable représentation de...
4,259 x 1,314

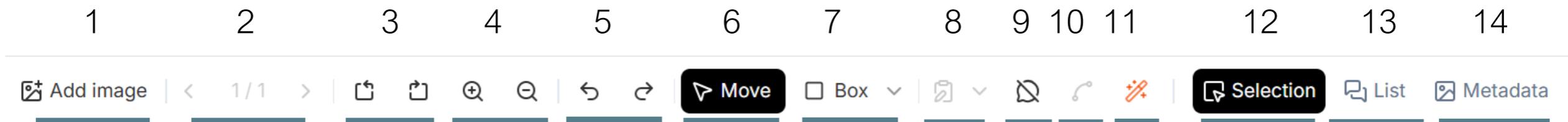


Université de Louvain - Le...
2,910 x 4,313



La Halle aux Draps
2,919 x 2,509

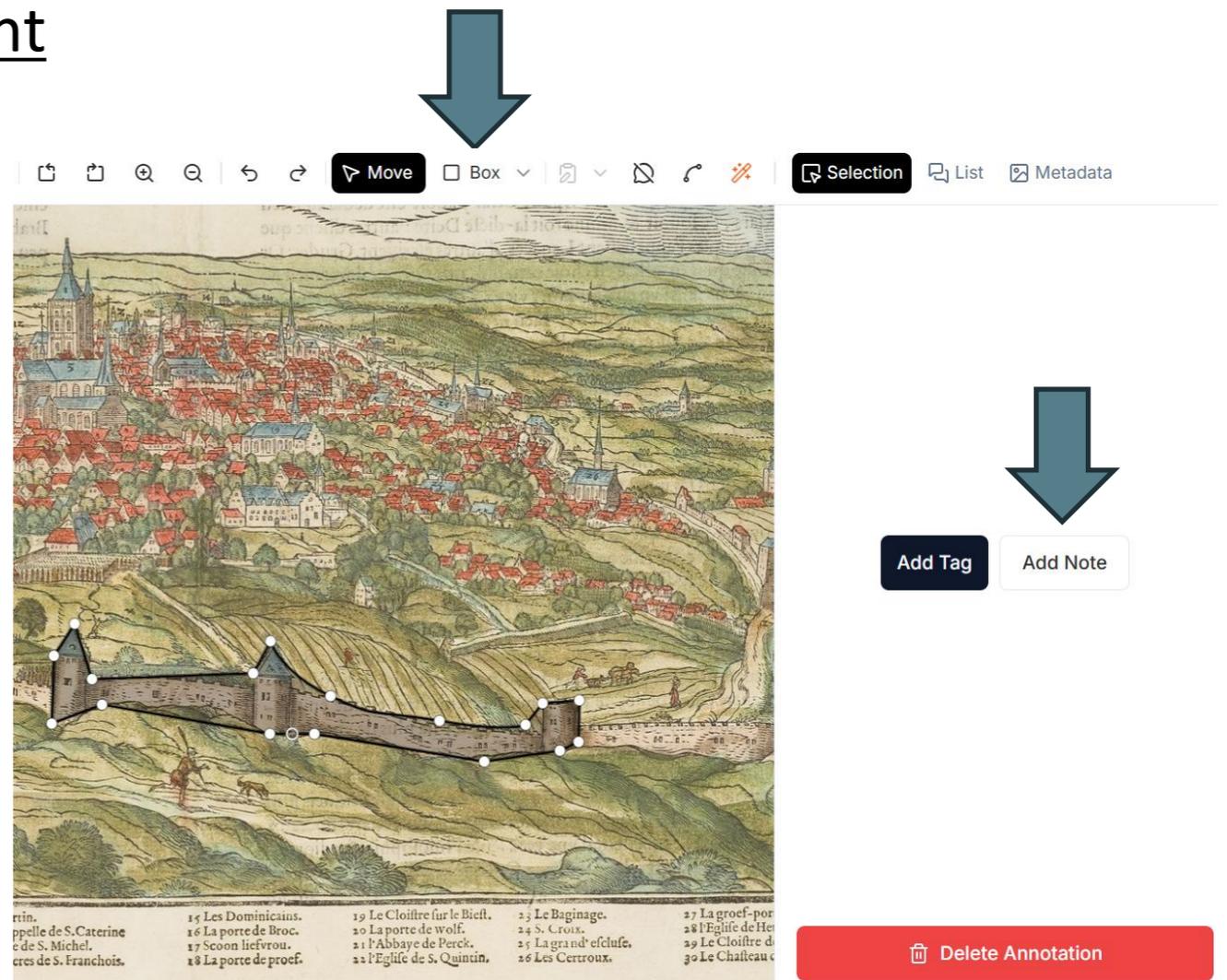
Overview



1. Add an image
2. Browse images in the same subfolder
3. Rotate image 90° left or right
4. Zoom in or out
5. Undo or redo
6. Move (pan) across the image
7. Draw a shape (select box, polygon, ellipse, or path)
8. Copy an image snippet to the clipboard
9. Hide all annotations
10. Use smart tools to select irregular shapes or transcribe text
11. Add a relation between two entities
12. View details of the currently selected annotation
13. List all annotations
14. Add or edit individual image metadata

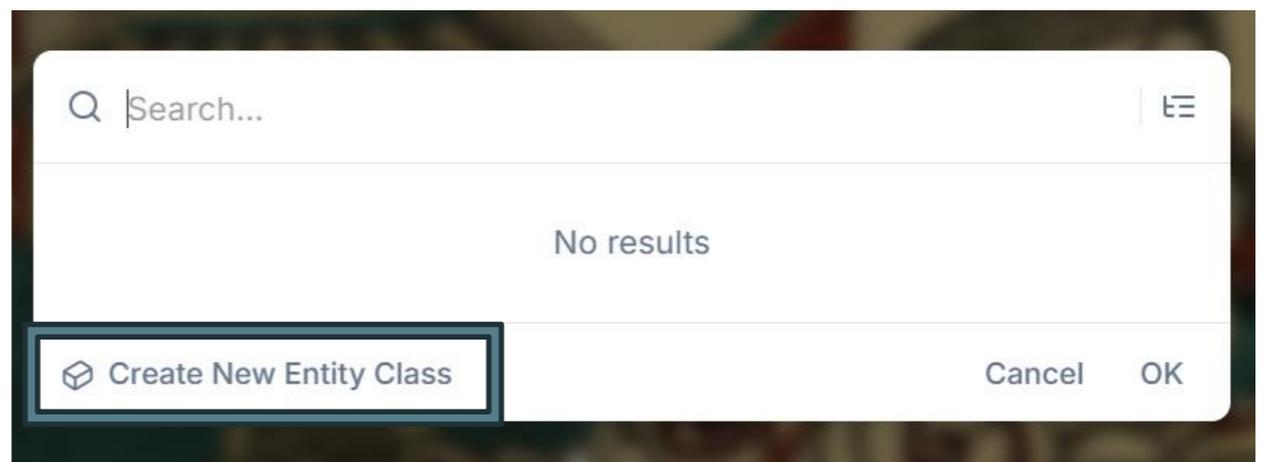
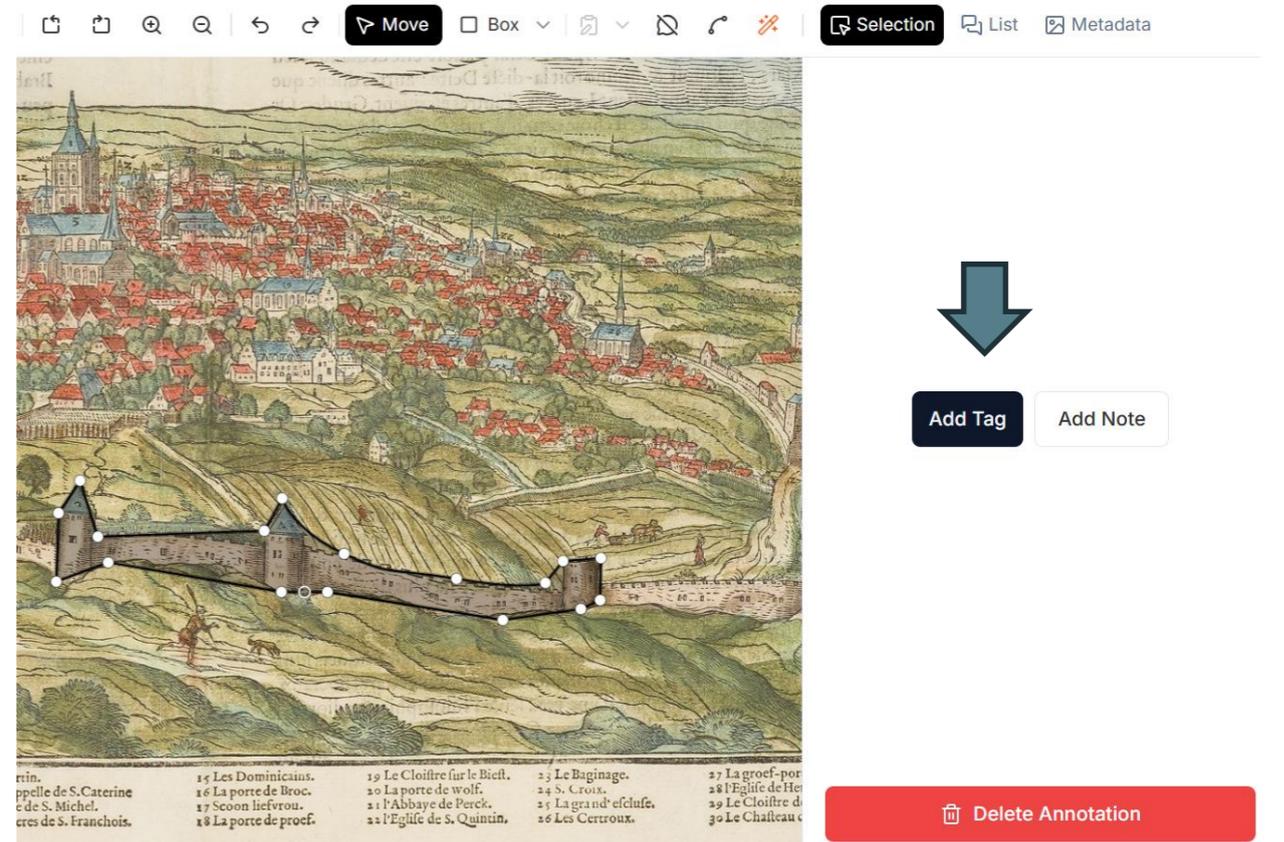
Drawing Annotations

1. Click the draw button (blue arrow) and select a shape (**box, polygon, ellipse, or path**)
2. Click once (without holding the mouse button) to start drawing
3. For polygons: each click adds a point
4. **Double click** to close the shape
5. Add Tag or Note



Adding Tags (or Notes)

1. Click **Add Tag**
2. Click **Create New Entity Class**



Creating Entities

1. Name your **Entity Class** (e.g. city_wall)
2. (Optional) Define a new color and a display name
3. (Optional) Add a description
4. Click the drop down menu next to **No Properties**

The screenshot shows a web interface for creating an entity class. On the left, there are several input fields: 'Entity Class *' with the value 'city_wall', 'Color' with the value '#485d1c', 'Display Name', 'Parent Class', and 'Entity Class Description'. Below these is a dropdown menu currently set to 'No Properties', which is circled in red. At the bottom of the form is a dark blue button labeled 'Save Entity Class'. On the right side, there is a light blue 'Entity Preview' panel with a close button (X) in the top right corner. It contains the text 'This is how the data entry form for your Entity will appear in the annotation view.' and a preview of the entity as a green pill with a cube icon and the text 'city_wall'.

Adding Properties

1. Click **Add Property**
2. Define the **Property Name** (e.g. name)
3. Select an appropriate **Data Type** (e.g. text)
4. Click **Save Property** and then click **Save Entity Class**

Use Properties to record specific details in your annotations, such as weight, material, age, etc.

Property Name

Data Type
Aa Text

- ✓ Aa Text
- # Number
- ☰ Options
- ↔ Number Range
- ↔ URI
- 📍 Geo-coordinates
- 📏 Measurement
- 🎨 Color
- 📄 External Authority

Property Preview ✕
This is how your property will appear when editing an entity in the annotation interface.

name

Adding External Authority Data Type

1. Click **Add Property**
2. Select **External Authority** data type.
3. You will see the available options for external authorities. Select one you want to associate with (i.e. Wikipedia)
4. When you have finished editing, be sure to **Save Property** and **Save Entity Class**.

Use Properties to record specific details in your annotations, such as weight, material, age, etc.

Property Name

Data Type

- TGAZ
China Historical GIS placename database
- Wikipedia
The free encyclopedia (English)
- Baidu
Baidu encyclopedia
- CBDB
China Biographical Database Project
- DILA (Person)
Buddhist Studies Authority Database Project (Person Search)
- DILA (Place)
Buddhist Studies Authority Database Project (Place Search)
- Manchu
Manchu texts and objects
- Digerati
Korean personal names
- Hucker Dictionary
A Dictionary of Official Titles in Imperial China

Allow multiple values

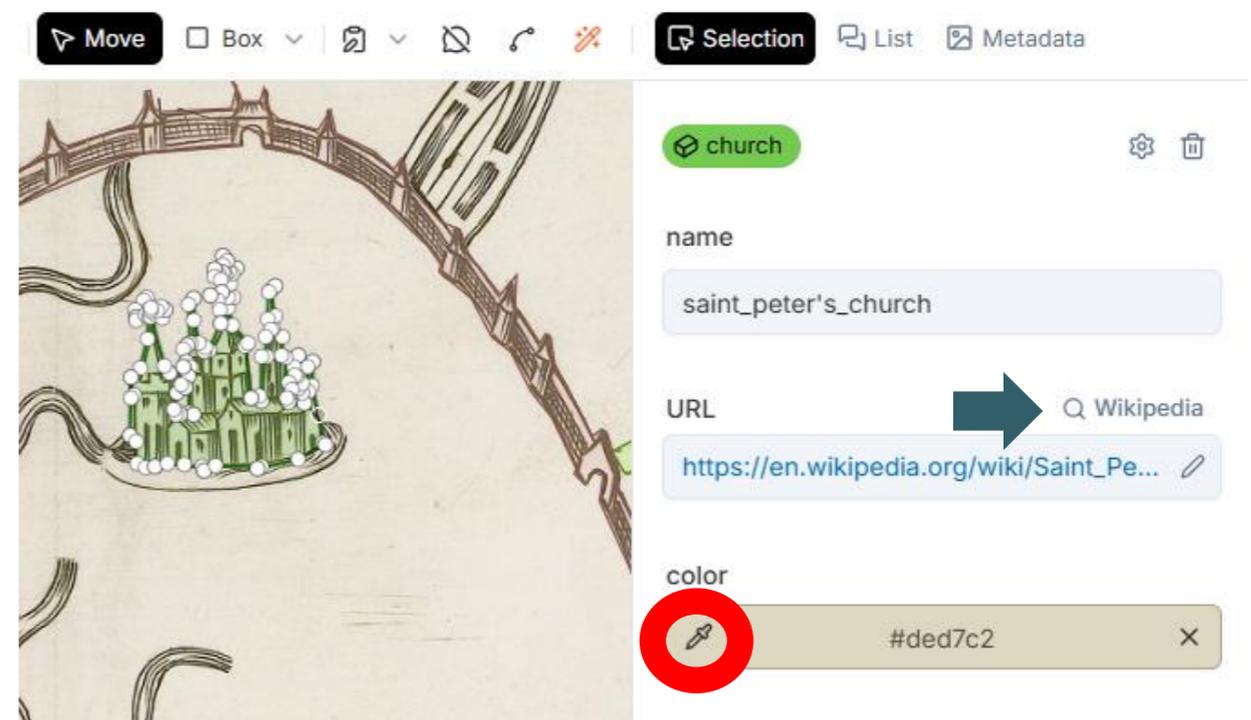
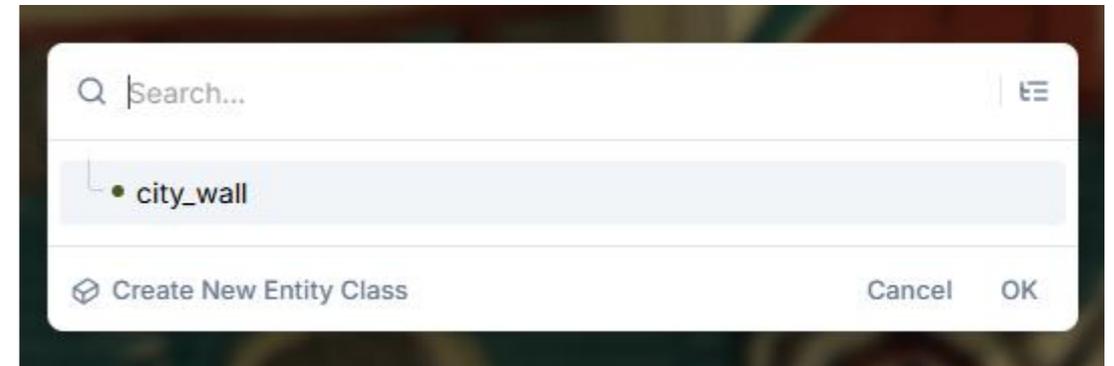
Property Description

Property Preview ×
This is how your property will appear when editing an entity in the annotation interface.

Wikipedia

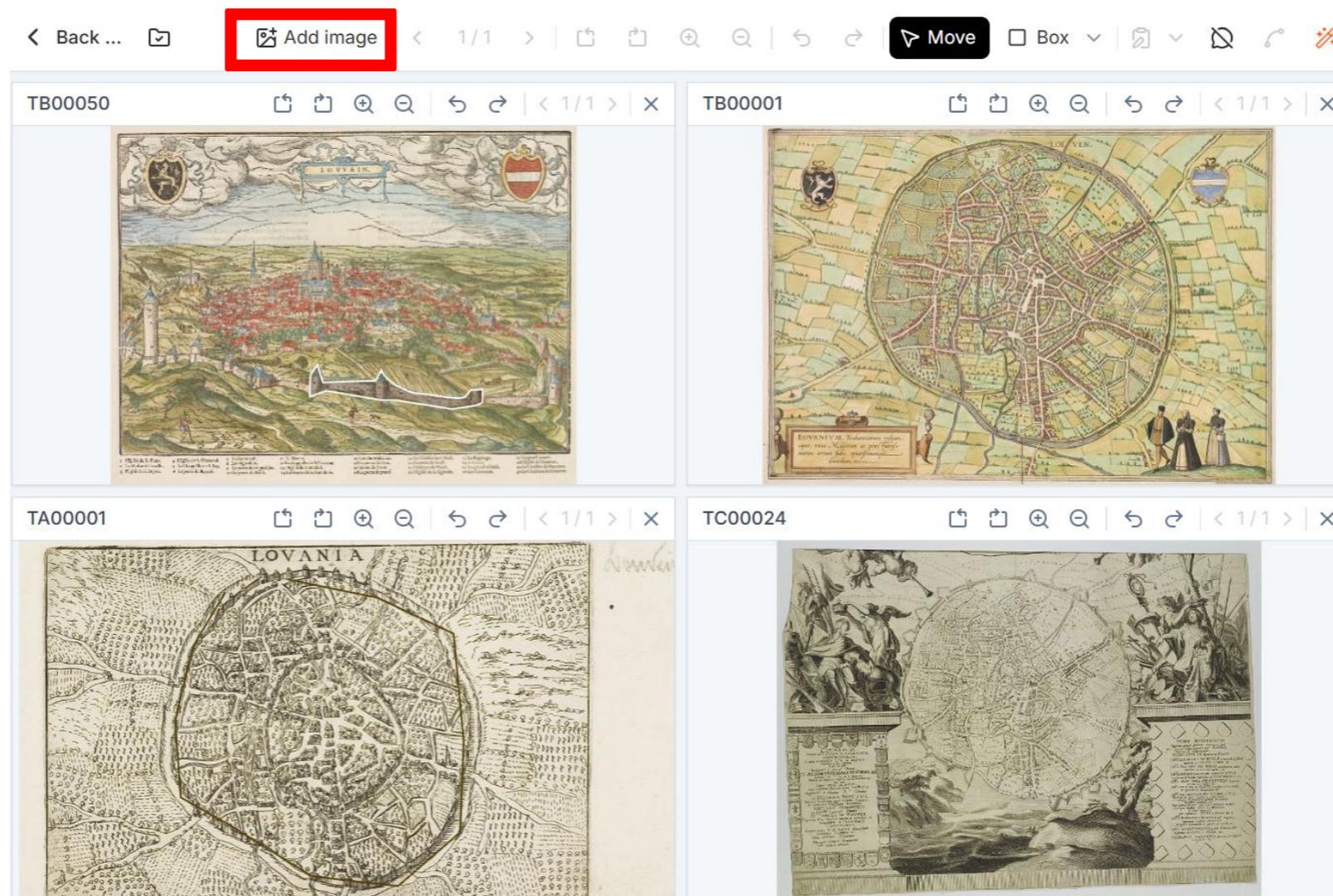
Tagging an Entity Class

1. You will now see the new entity class added (e.g. city_wall). Select the entity class and click **OK**
2. Fill in the property fields in the right panel
3. To use an external authority service (e.g. Wikipedia), click the authority service name (blue arrow)
4. To use a color pixel, click the color picker icon and select a part of the image (red circle).



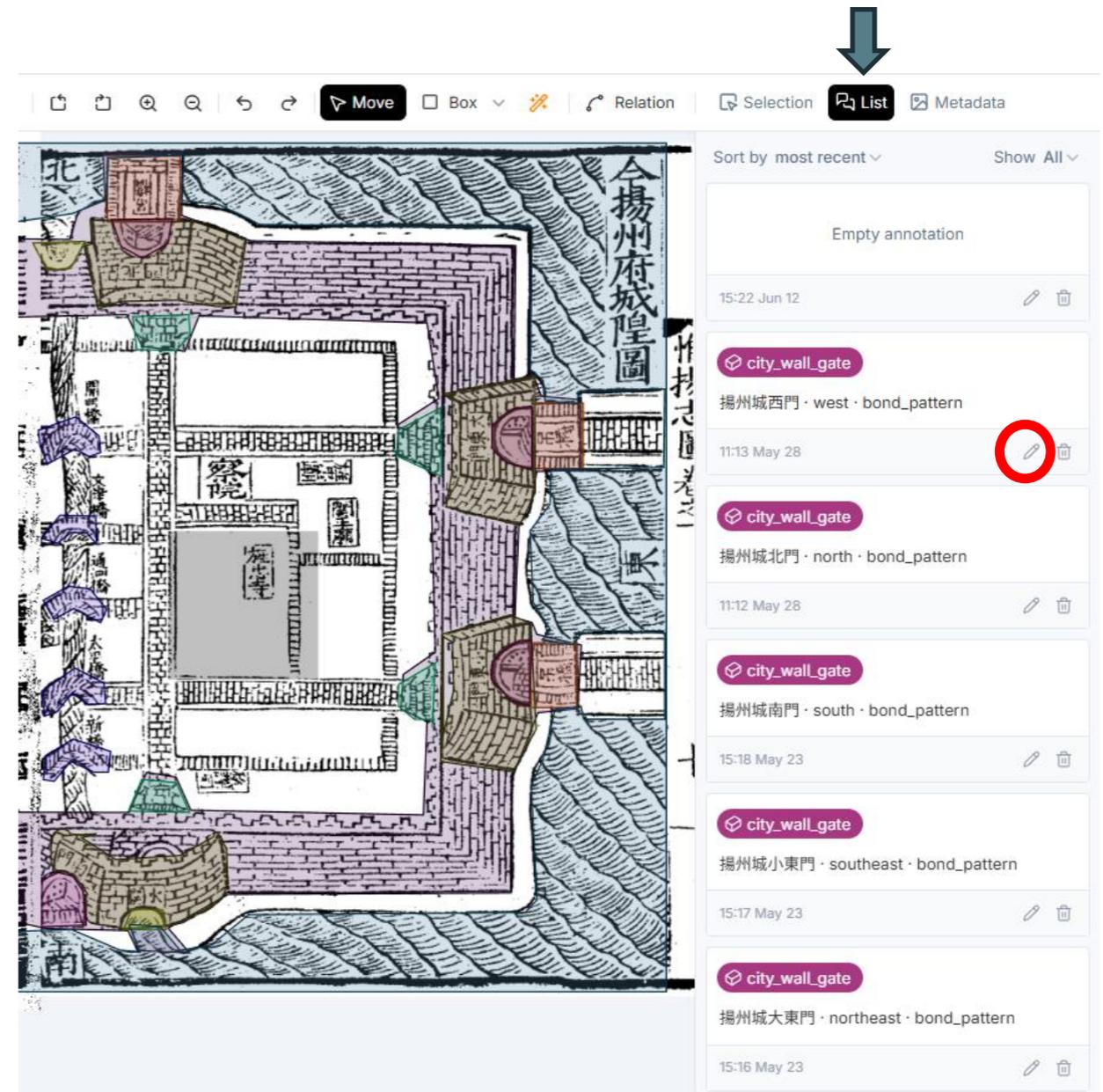
Annotating Multiple Images Simultaneously

1. Click **Add Image** and select the images you want to annotate together
2. You can drag and drop windows to adjust the layout



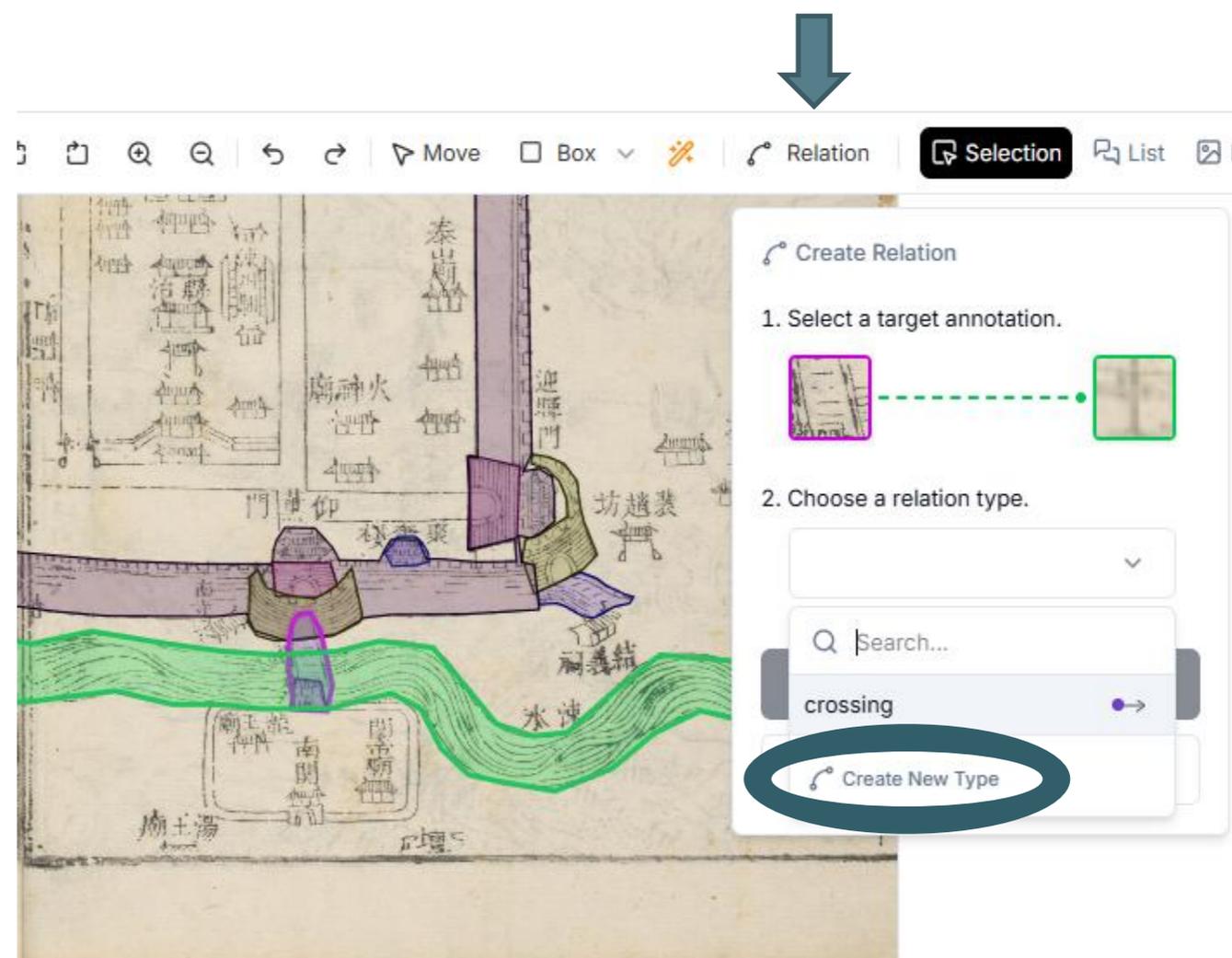
Editing Annotations

- Click a drawn shape to view or edit an annotation
- In **List** view (blue arrow), click the **pencil icon** (red circle) to modify annotations



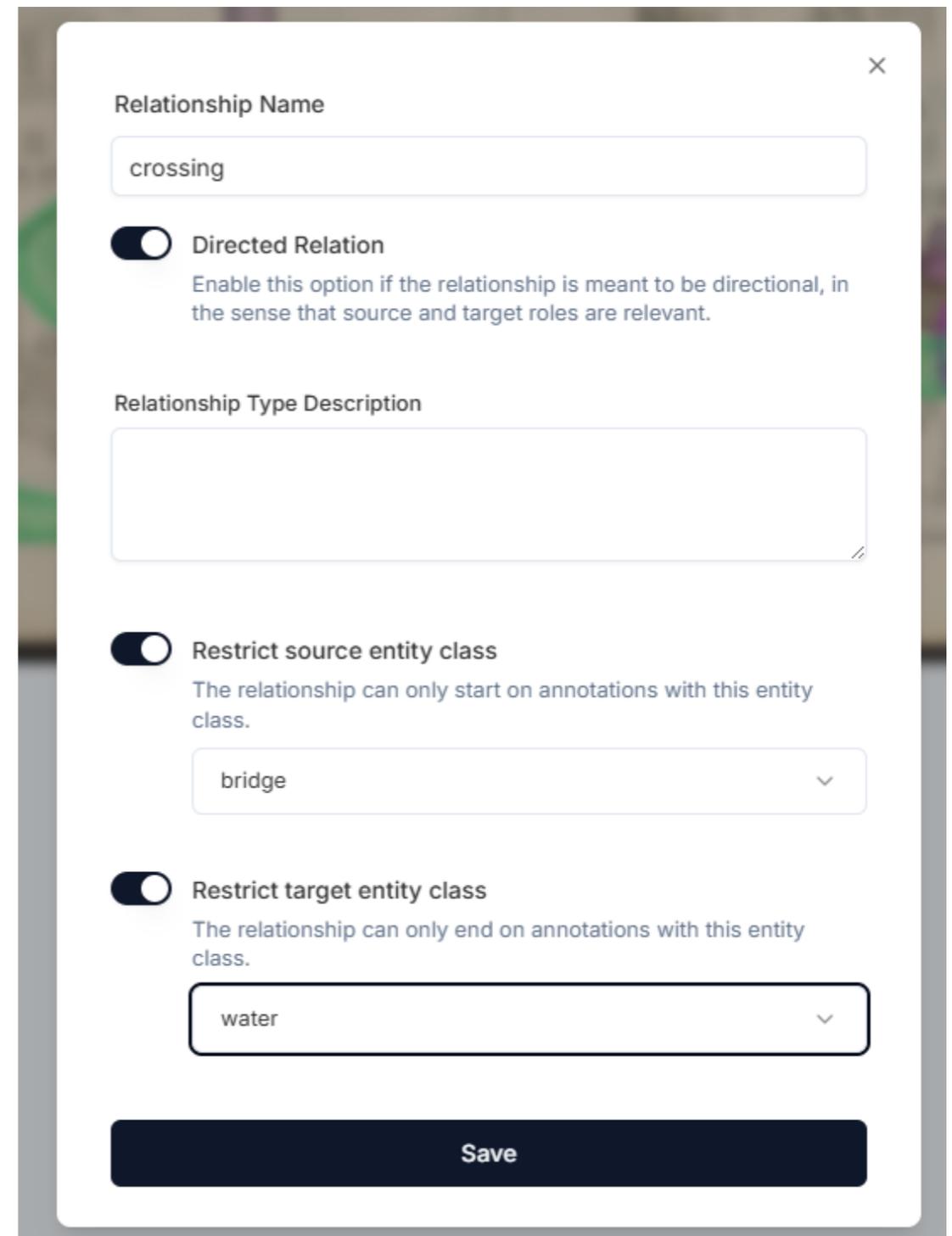
Defining Relationships between Image Regions

1. Select the **source** entity
2. Click **Relation** in the menu bar
3. Select the **target** entity
4. **Create New Type** or choose an existing relation type



Defining Relationships

1. Enter the **Relationship Name**
2. (Optional) Indicate whether it is directed
3. (Optional) Set restrictions for the **source** and/or **target** entity classes
4. Click **Save**



A screenshot of a web form for defining a relationship. The form is titled "Relationship Name" and has a close button (X) in the top right corner. It contains the following fields and options:

- Relationship Name:** A text input field containing the word "crossing".
- Directed Relation:** A toggle switch that is turned on. Below it is the text: "Enable this option if the relationship is meant to be directional, in the sense that source and target roles are relevant."
- Relationship Type Description:** A large, empty text area.
- Restrict source entity class:** A toggle switch that is turned on. Below it is the text: "The relationship can only start on annotations with this entity class." Below this is a dropdown menu with the word "bridge" selected.
- Restrict target entity class:** A toggle switch that is turned on. Below it is the text: "The relationship can only end on annotations with this entity class." Below this is a dropdown menu with the word "water" selected.
- Save:** A dark blue button with the word "Save" in white text.

Smart Selection Tools: [Auto Select](#)

Inbox - Sunkyu Lee - Outlook x IM IMMARKUS

immarkus.rainersimon.io/#/annotate/iiif:cd6e90f5342d8380:3156510764

TB00050 Add image 1/1 Move Box Selection List Metadata

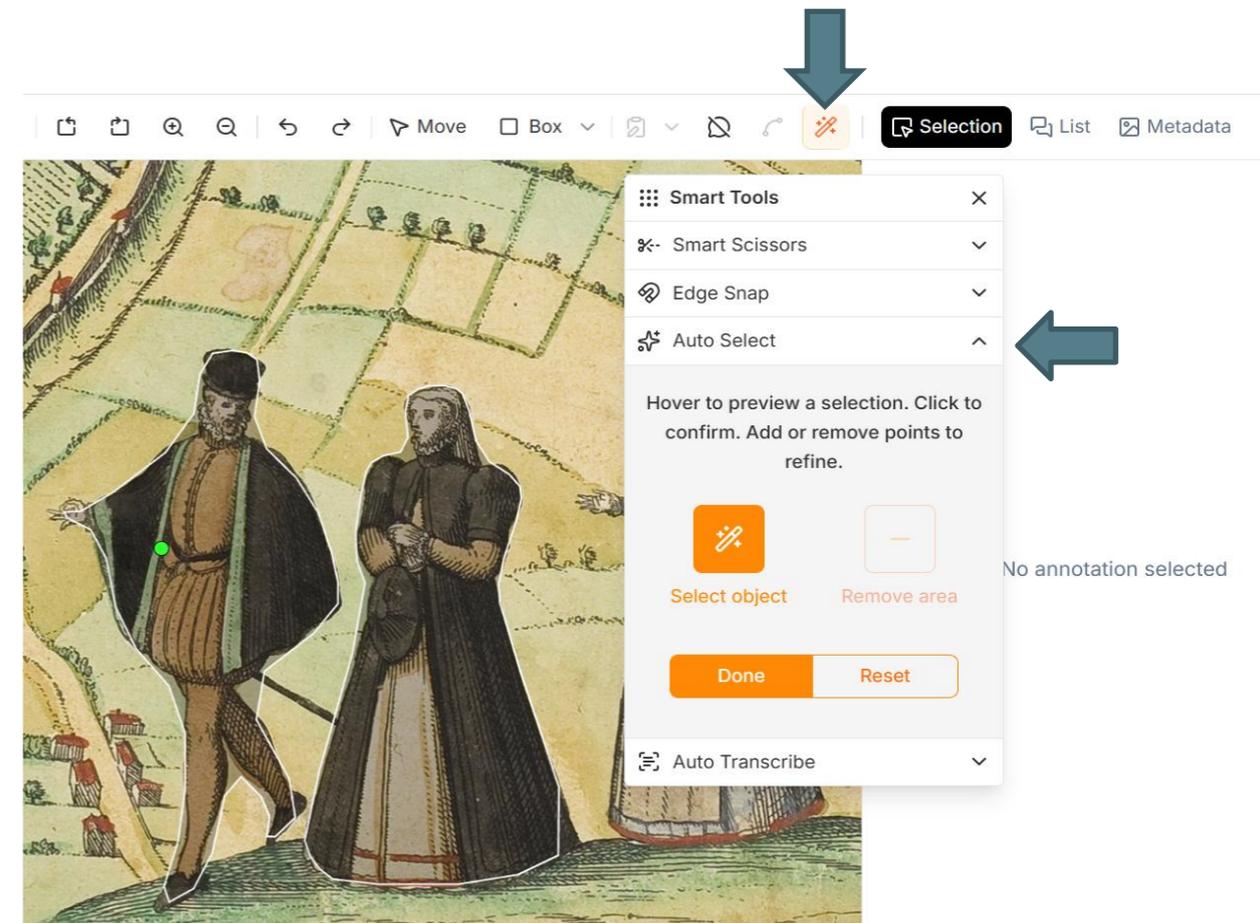
LOVVAIN.

- 1 l'Eglise de S. Pierre.
- 2 La Maison de la ville.
- 3 l'Eglise de S. Jaques.
- 4 l'Eglise de S. Ghertrud.
- 5 La Chappelle de S. Ian.
- 6 La porte du Bourch.
- 7 Verloren coff.
- 8 Les vignobles.
- 9 La porte des vignobles.
- 10 La porte de Dieft.
- 11 S. Martin.
- 12 La chappelle de S. Caterine
- 13 l'Eglise de S. Michel.
- 14 Les Freres de S. Francois.
- 15 Les Dominicains.
- 16 La porte de Broc.
- 17 Scon liefvrou.
- 18 La porte de prof.
- 19 Le Cloître sur le Bieft.
- 20 La porte de wolf.
- 21 l'Abbaye de Perck.
- 22 l'Eglise de S. Quintin.
- 23 Le Baginage.
- 24 S. Croix.
- 25 La grand' escluse.
- 26 Les Certroux.
- 27 La groef-porte.
- 28 l'Eglise de Heueren.
- 29 Le Cloître de Heueren.
- 30 Le Chateau de Heueren.

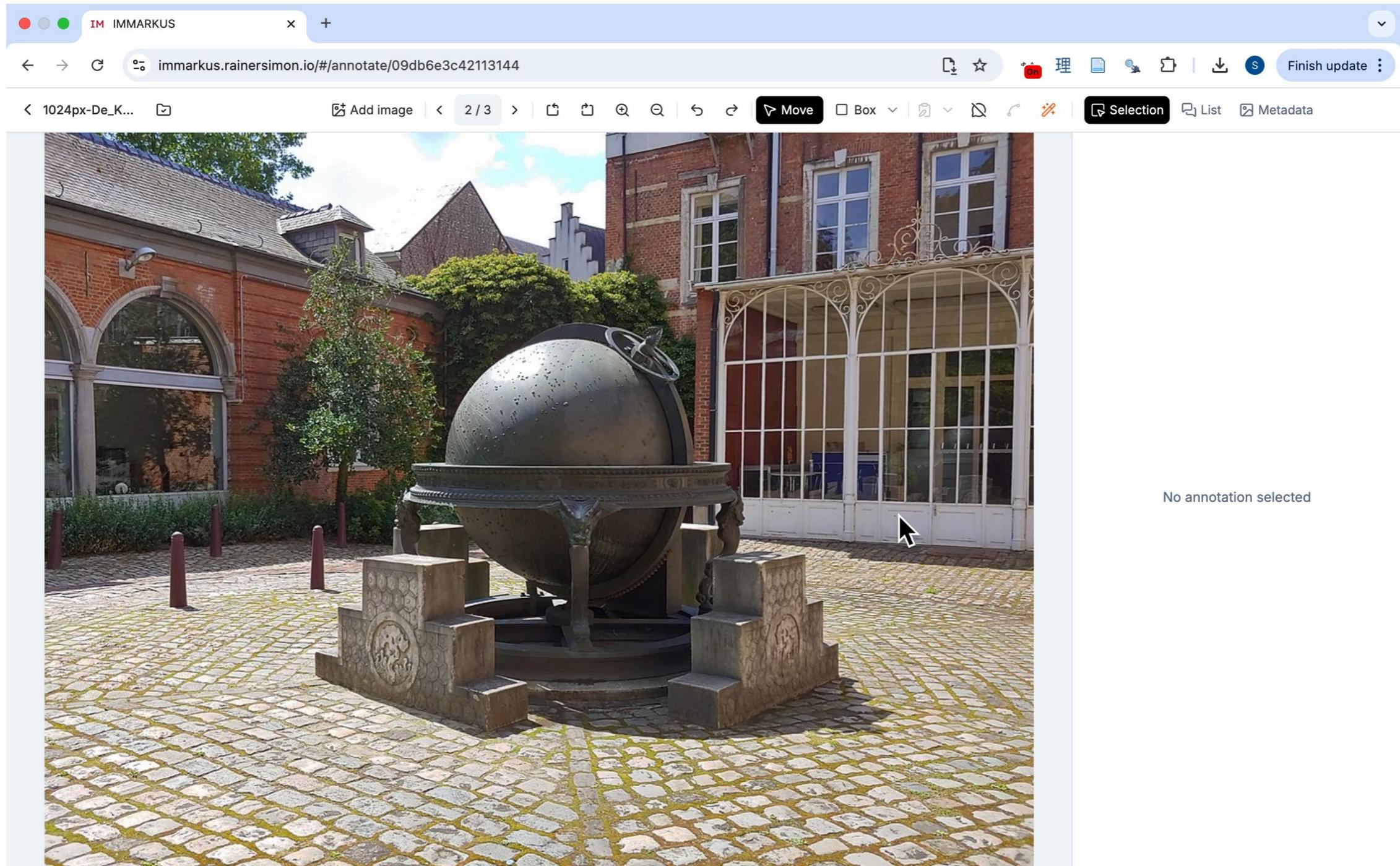
No annotation selected

Smart Selection Tools

1. Click the  magic wand icon
2. Click **Auto Select** and **Select object**
3. Wait for the detection model to load
4. Hover to preview the detected object (highlighted area)
5. Click the highlighted area to confirm selection
6. To refine:
 - click nearby points to add areas (**green** dots)
 - click **Remove area** and then click areas (**red** dots) to exclude them
7. Click **Done** to generate a polygon
8. Click the **X** close icon to exit the tool



Smart Selection Tools: Smart Scissors



Copying Image Snippets



< 1024px-De_K... Add image < 2 / 3 > Selection List Metadata



Add Tag

Add Note

Delete Annotation

Practice 2. Annotating Images with AI assistance

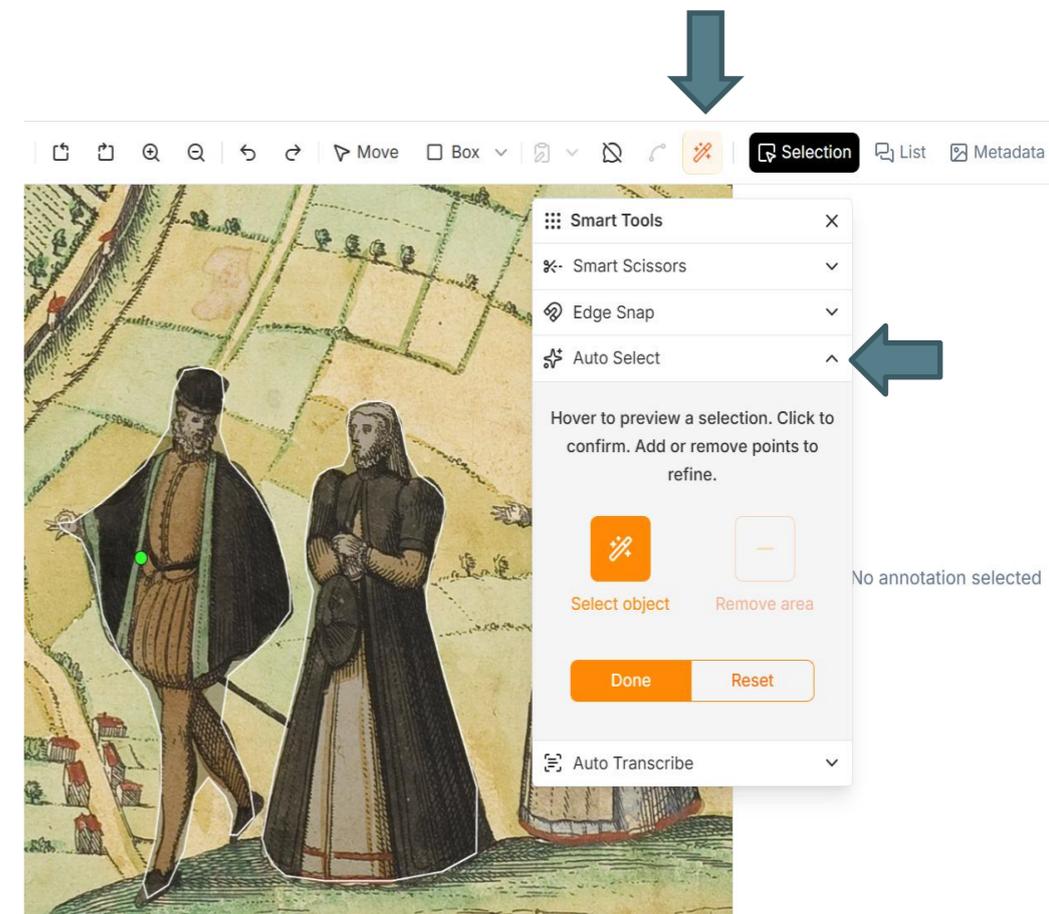
Use the **magic wand** to annotate images

1. Try using smart tools (**smart scissors** or **auto select**) to draw a shape
 - Wait for the detection model to load and hover to preview a selection
 - Click on the highlighted area to confirm
 - Click **Done**

2. **Add tags or notes** to the shape you drew

3. Click **List** to view all annotations

➤ Stuck? Try again after refreshing the page!



Transcribing (& Translating) Text from Images

< NP Add image < 2 / 3 > Move Box List Metadata

annotation

description

沙馬磯頭山常有雲霧非天朗氣清不得見也昔人言有絳衣綉衣對奕之觀若無稽然生成之碁盤石磴至今猶存焉此山直接呂宋舟人必由此放洋中有澳名龜仔壳北風大船常泊此南行四更至紅頭嶼係是生番聚處不入版圖其地產銅所用器物悉皆銅焉大岡山有石洞莫測其底以石投之相傳有聲云是處通海底嘉義城南五十里有火山水火同源並出隨之有火無烟肌薪置其上則烟輒起矣臺灣東北有暗洋紅毛夷舟泊其地無分晝夜山明水秀萬花遍野上無居人謂其可居遂留二百人居之次歲復至則暗如長夜所留之人已無一存焉肌六索之石上有字云春旦而秋腊暗俱屬鬼怪人漸消亡矣

沙馬磯頭山常有雲霧非天朗氣清不得見也昔人言有絳衣綉衣對奕之觀若無稽然生成之碁盤石磴至今猶存焉此山直接呂宋舟人必由此放洋中有澳名龜仔壳北風大船常泊此南行四更至紅頭嶼係是生番聚處不入版圖其地產銅所用器物悉皆銅焉

大岡山有石洞莫測其底以石投之相傳有聲云是處通海底

嘉義城南五十里有火山水火同源並出隨之有火無烟肌薪置其上則烟輒起矣

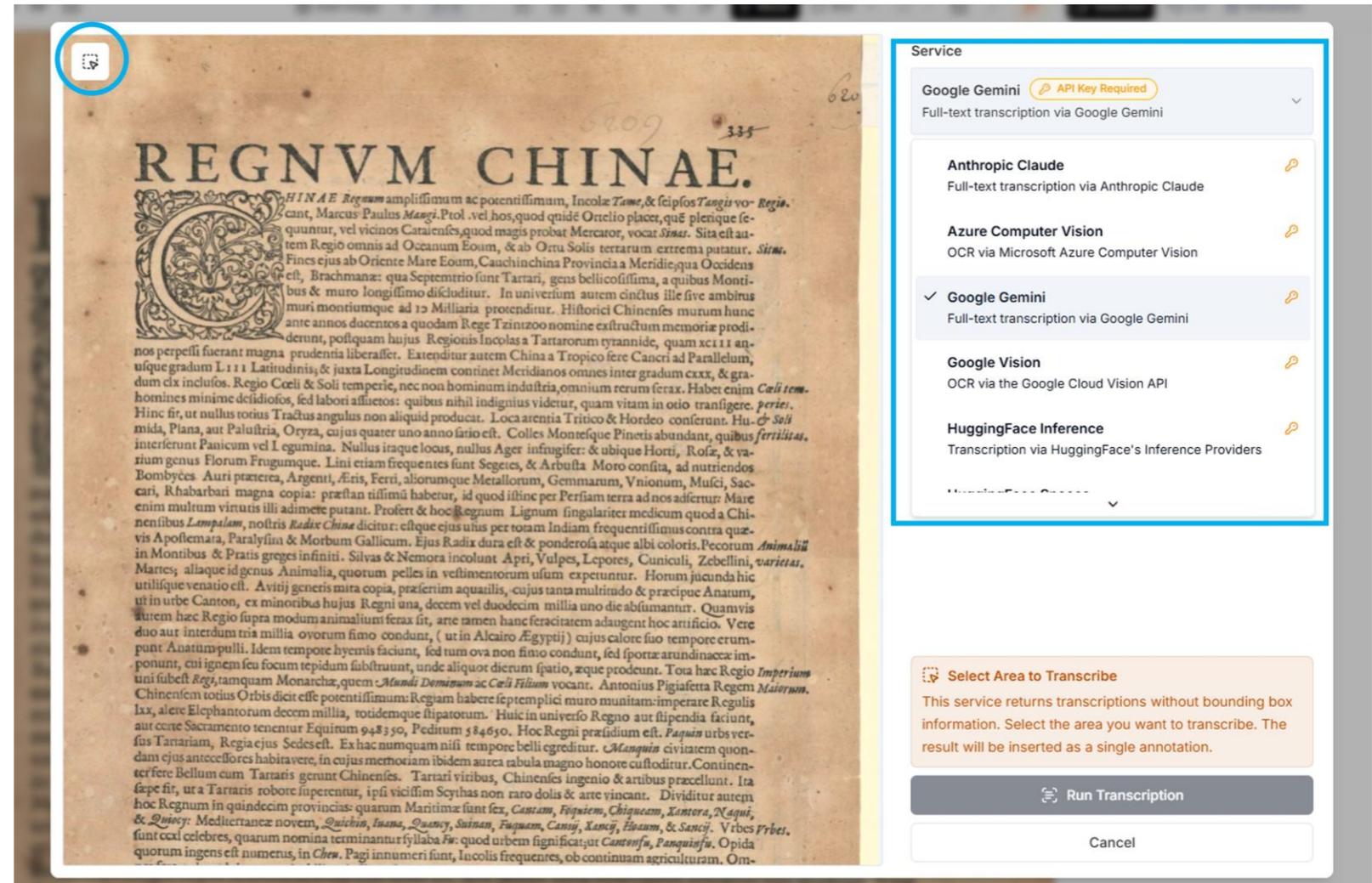
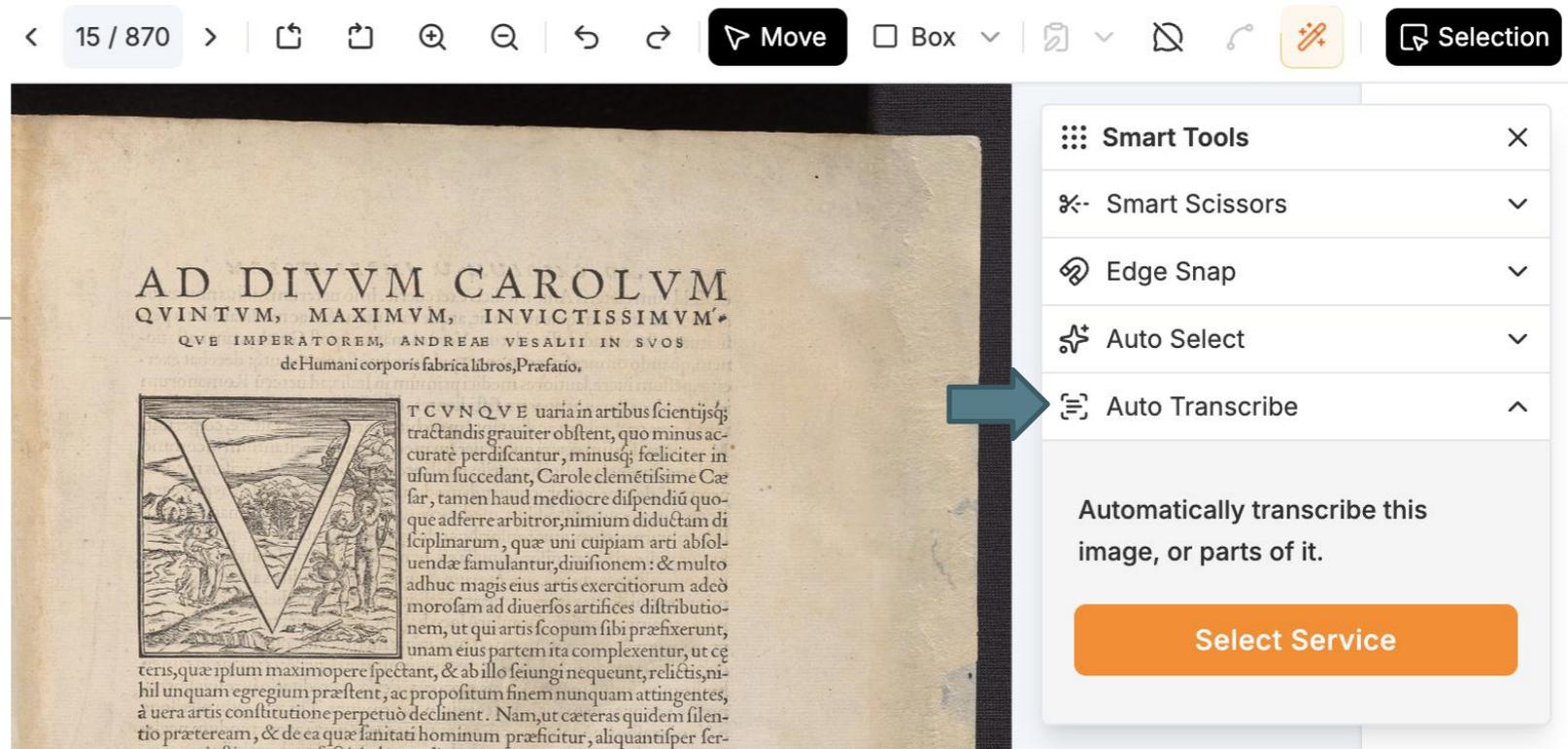
臺灣東北有暗洋紅毛夷舟泊其地無分晝夜山明水秀萬花遍野上無居人謂其可居遂留二百人居之次歲復至則暗如長夜所留之人已無一存焉肌六索之石上有字云春旦而秋腊暗俱屬鬼怪人漸消亡矣

Auto-Transcribe

1. Click **Auto Transcribe**
2. Click **Select Service**
3. Select a transcription service

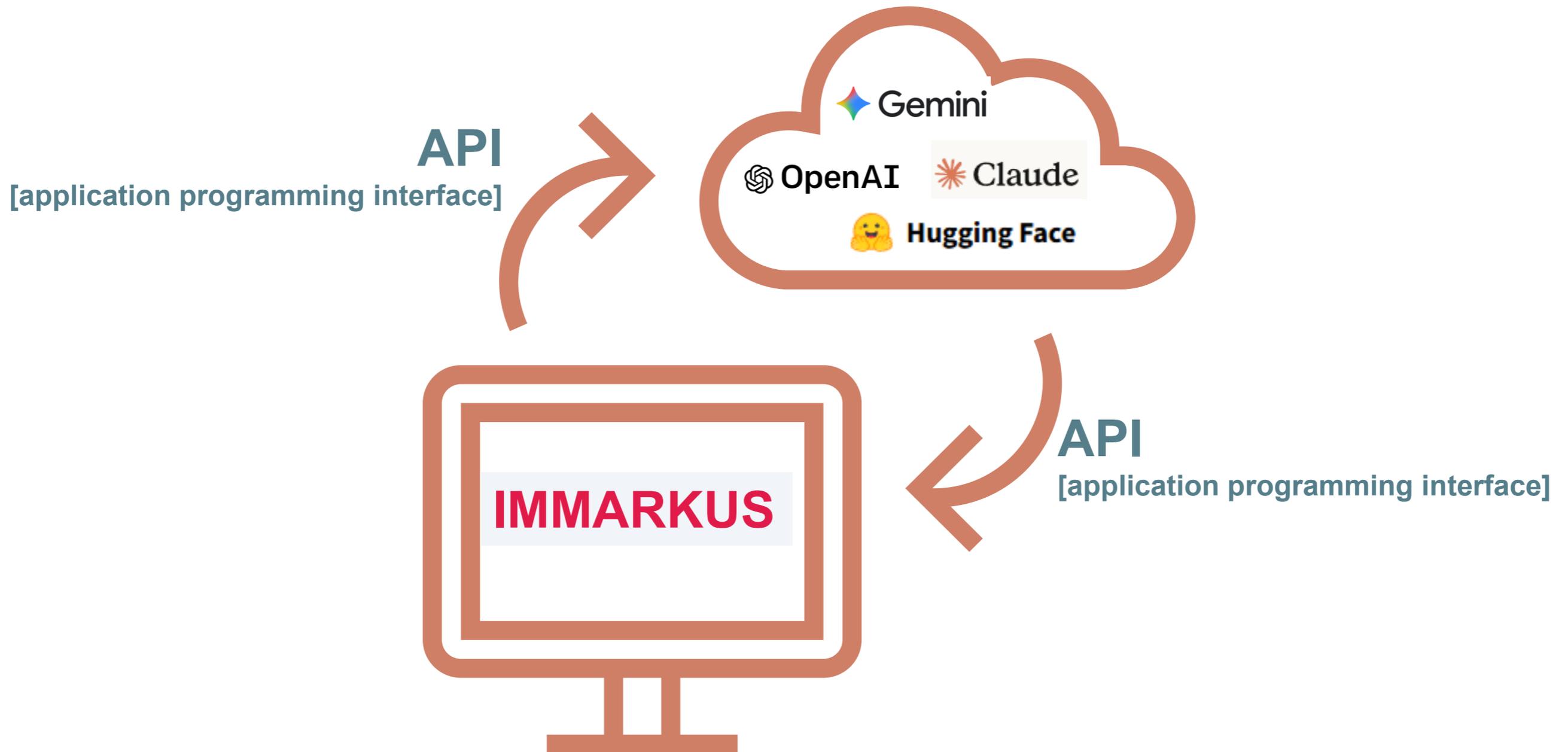
! Some services require an API key (see [IMMARKUS Wiki](#) for instructions) !

4. Click **Run Transcription**



What is an API key?

API: a mechanism for computers or services to communicate with each other



What is an API key?

API key: a unique "digital key" provided by an AI service that unlocks its features and allows your app (e.g., IMMARKUS) to access them

Access Tokens

User Access Tokens

Access tokens authenticate your identity to the Hugging Face Hub and allow applications to perform actions based on token permissions.

⚠️ Do not share your Access Tokens with anyone; we regularly check for leaked Access Tokens and remove them immediately.

Name	Value	Last Refreshed Date	Last Used Date	Permissions
IMMARKUS auto transcribe	hf_...iqfW	Aug 4	about 6 hours ago	FINEGRAINED

+ Create new token



Hugging Face

open-source AI platform and community that currently offers an easy, low-cost way to run transcription models using your own API key

How to Get an API key

1. Click the [link](https://huggingface.co/):
<https://huggingface.co/>
2. Sign up a or log in your **Hugging Face account**
3. Click **Settings**
4. Click **Access Tokens**
5. Click **Create new token**

The image shows two screenshots from the Hugging Face website. The top screenshot shows the main navigation menu with the 'Settings' option highlighted by a blue arrow. The bottom screenshot shows the 'Access Tokens' page with the '+ Create new token' button highlighted by a red box and a blue arrow.

Hugging Face Search models, datasets, users... Models Datasets

Hugging Face is way more fun with friends and colleagues! 🥳 [Join an organization](#)

+ New

dawnz1z

- Profile
- Inbox (0)
- Settings
- Billing
- Get PRO

Organizations

- Create New

Following 0

All Models Datasets Spaces Papers Collections

Community Posts Upvotes Likes Articles

NEW Follow your favorite AI creators Refresh List X

- black-forest-labs · Advancing state-of-the-art ... Follow
- Etched · Integrating generative AI with gamin... Follow
- meta-llama · Creating powerful open-source l... Follow

dawn zhuang dawnz1z

- Profile
- Account
- Authentication
- Organizations
- Billing
- Access Tokens
- SSH and GPG Keys
- Inference Providers
- Webhooks
- Papers

Access Tokens

User Access Tokens

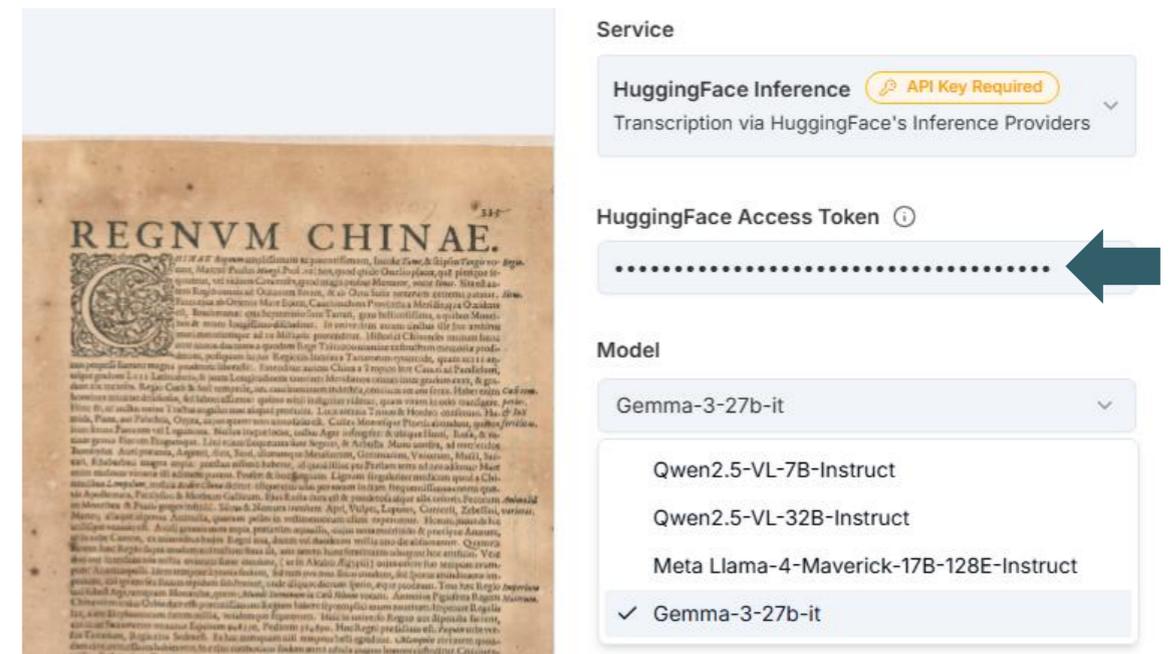
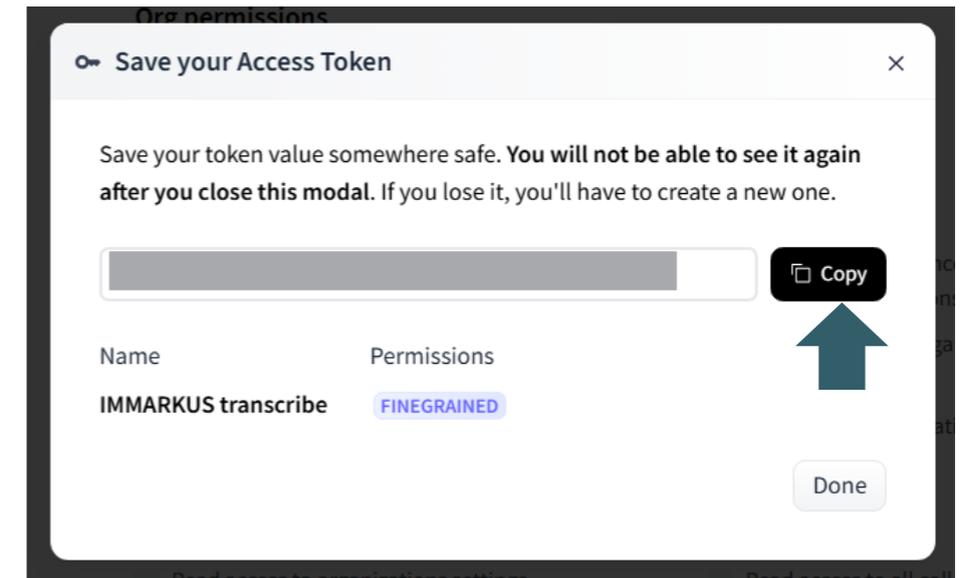
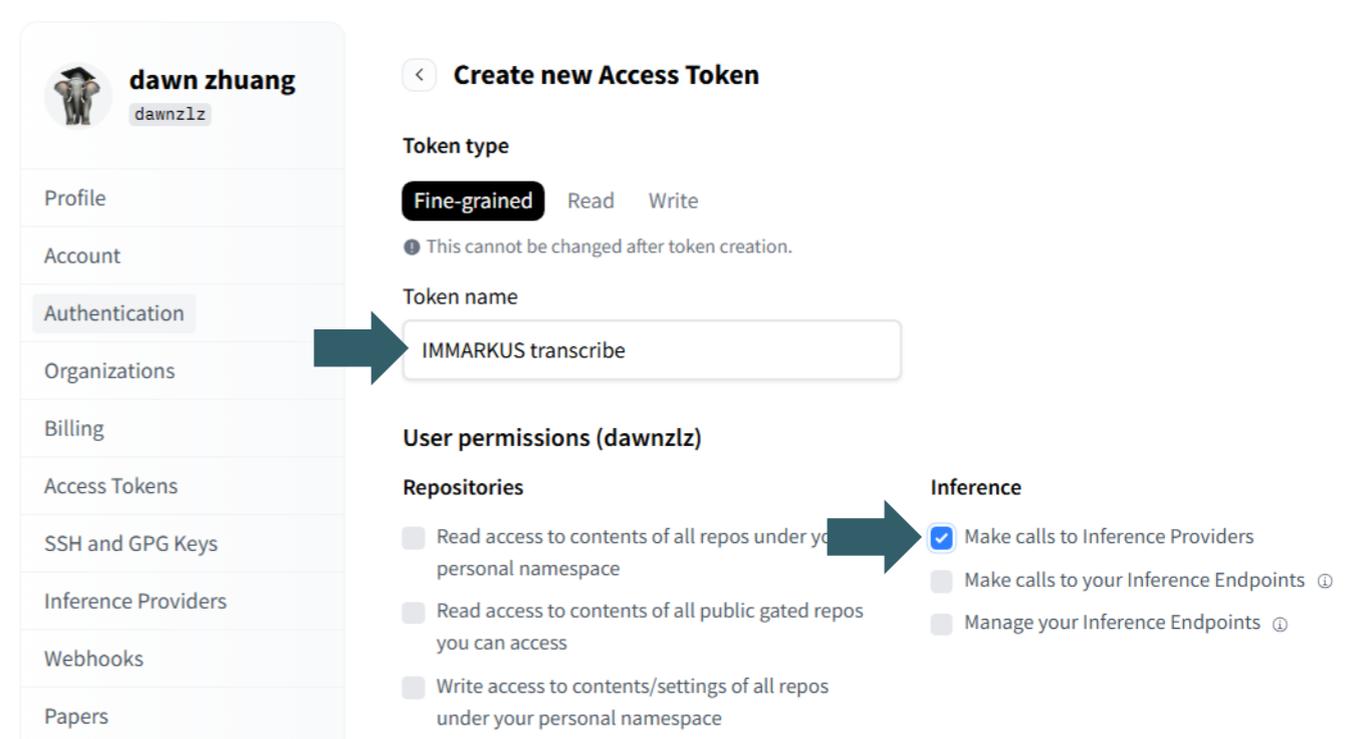
Access tokens authenticate your identity to the Hugging Face Hub and allow applications to perform actions based on token permissions. ⚠️ Do not share your Access Tokens with anyone; we regularly check for leaked Access Tokens and remove them immediately.

Name	Value	Last Refreshed Date	Last Used Date	Permissions
immarkus-new	hf_...srlD	about 1 hour ago	about 1 hour ago	FINEGRAINED
IMMARKUS auto transcribe	hf_...iqfW	Aug 4	about 5 hours ago	FINEGRAINED

+ Create new token

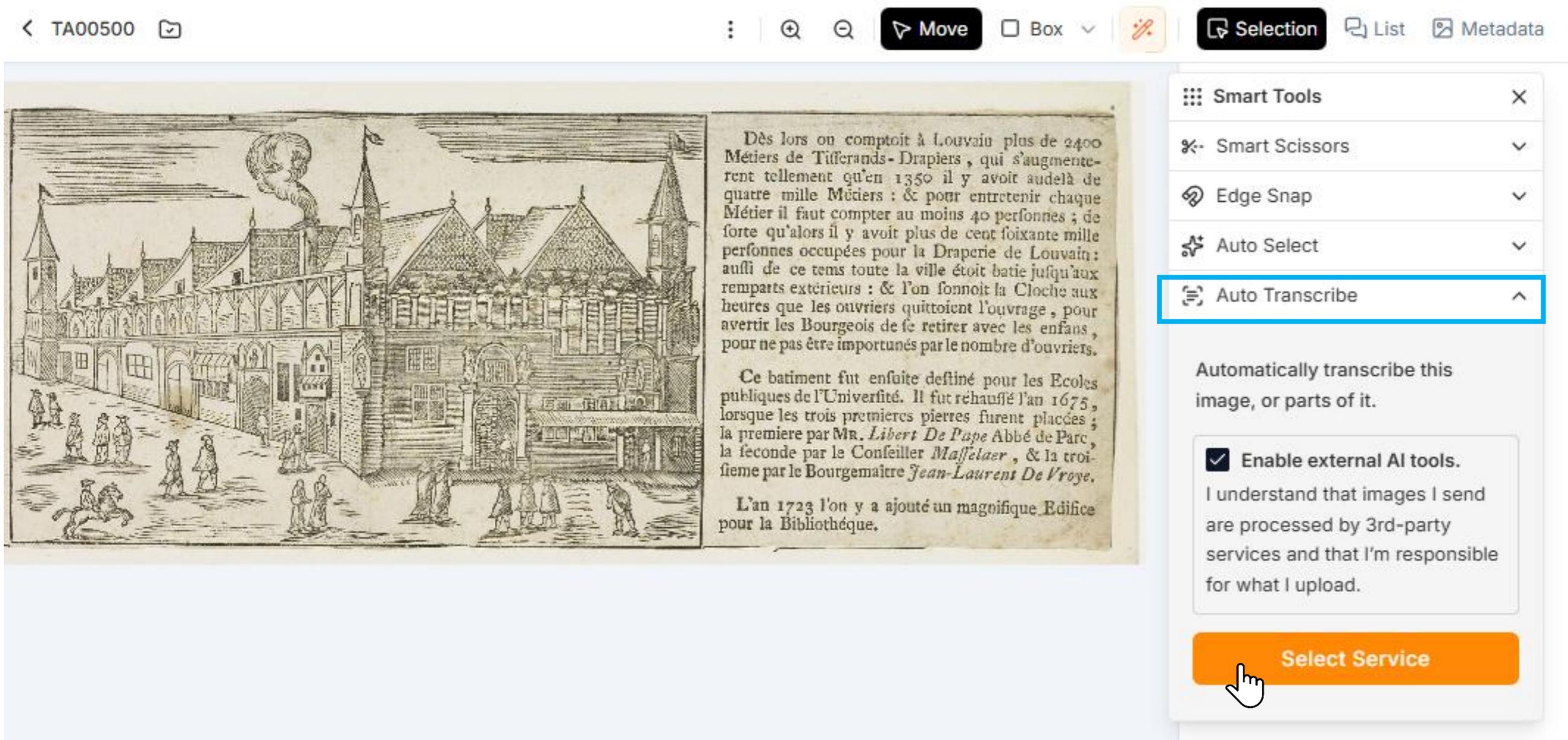
How to Get an API key

6. Name your token
7. **Check Make calls to Inference Providers under Inference**
8. Click **Create token**
9. Copy the token (API key) and paste it to the IMMARKUS interface under service **HuggingFace Inference**



Transcribing Text from Images

1. Open the Auto Transcribe feature and select a service



TA00500

Move Box Selection List Metadata

Smart Tools

Smart Scissors

Edge Snap

Auto Select

Auto Transcribe

Automatically transcribe this image, or parts of it.

Enable external AI tools.
I understand that images I send are processed by 3rd-party services and that I'm responsible for what I upload.

Select Service

Dès lors on comptoit à Louvain plus de 2400 Métiers de Tisserands-Drapiers, qui s'augmenterent tellement qu'en 1350 il y avoit audelà de quatre mille Métiers : & pour entretenir chaque Métier il faut compter au moins 40 personnes ; de sorte qu'alors il y avoit plus de cent soixante mille personnes occupées pour la Draperie de Louvain : aussi de ce tems toute la ville étoit batié jusqu'aux remparts extérieurs : & l'on sonnoit la Cloche aux heures que les ouvriers quittoient l'ouvrage, pour avertir les Bourgeois de se retirer avec les enfans, pour ne pas être importunés par le nombre d'ouvriers.

Ce bâtiment fut ensuite destiné pour les Ecoles publiques de l'Université. Il fut réhaussé l'an 1675, lorsque les trois premières pierres furent placées ; la première par Mr. *Libert De Pape* Abbé de Parc, la seconde par le Conseiller *Masselaer*, & la troisième par le Bourgeois *Jean-Laurent De Vroye*.

L'an 1723 l'on y a ajouté un magnifique Edifice pour la Bibliothèque.

Transcribing Text from Images

2. Set up your **API key** and select an area to transcribe

3. Click **Run Transcription**.

The screenshot displays a web application for transcribing text from images. On the left, a document image is shown with a pink bounding box around a text block. A blue circle highlights a selection tool icon in the top-left corner. The text within the bounding box is transcribed and displayed in a white box on the right. Below the image, there are controls for annotations and a green 'Import to IMMARKUS' button.

The configuration panel on the right includes:

- Service:** HuggingFace Inference (API Key Required) - Transcription via HuggingFace's Inference Providers
- HuggingFace Access Token:** A field with a masked token (dots) and an information icon.
- Model:** Qwen2.5-VL-32B-Instruct

At the bottom right, there is a blue 'Run Transcription' button and a white 'Cancel' button. A blue arrow points from the selected text area to the 'Run Transcription' button.

Select Area to Transcribe
This service returns transcriptions without bounding box information. Select the area you want to transcribe. The result will be inserted as a single annotation.

1 Annotations [Import to IMMARKUS](#)

Run Transcription **Cancel**

Transcribing Text from Images

4. Hover over the selected area to view the transcription, and import it into IMMARKUS to store, edit, or translate it

The screenshot displays the IMMARKUS interface for transcribing text from images. On the left, a historical document is shown with a pink selection box around a paragraph of text. A tooltip provides a transcription of the selected text. On the right, a configuration panel allows users to select a service (HuggingFace Inference), provide an access token, and choose a model (Qwen2.5-VL-32B-Instruct). A 'Run Transcription' button is visible, along with a 'Cancel' button. At the bottom left, there is a button to 'Import to IMMARKUS' with a red arrow pointing to it, and a status bar showing '1 Annotations'.

Service
HuggingFace Inference API Key Required
Transcription via HuggingFace's Inference Providers

HuggingFace Access Token ⓘ
.....

Model
Qwen2.5-VL-32B-Instruct

Select Area to Transcribe
This service returns transcriptions without bounding box information. Select the area you want to transcribe. The result will be inserted as a single annotation.

Run Transcription

Cancel

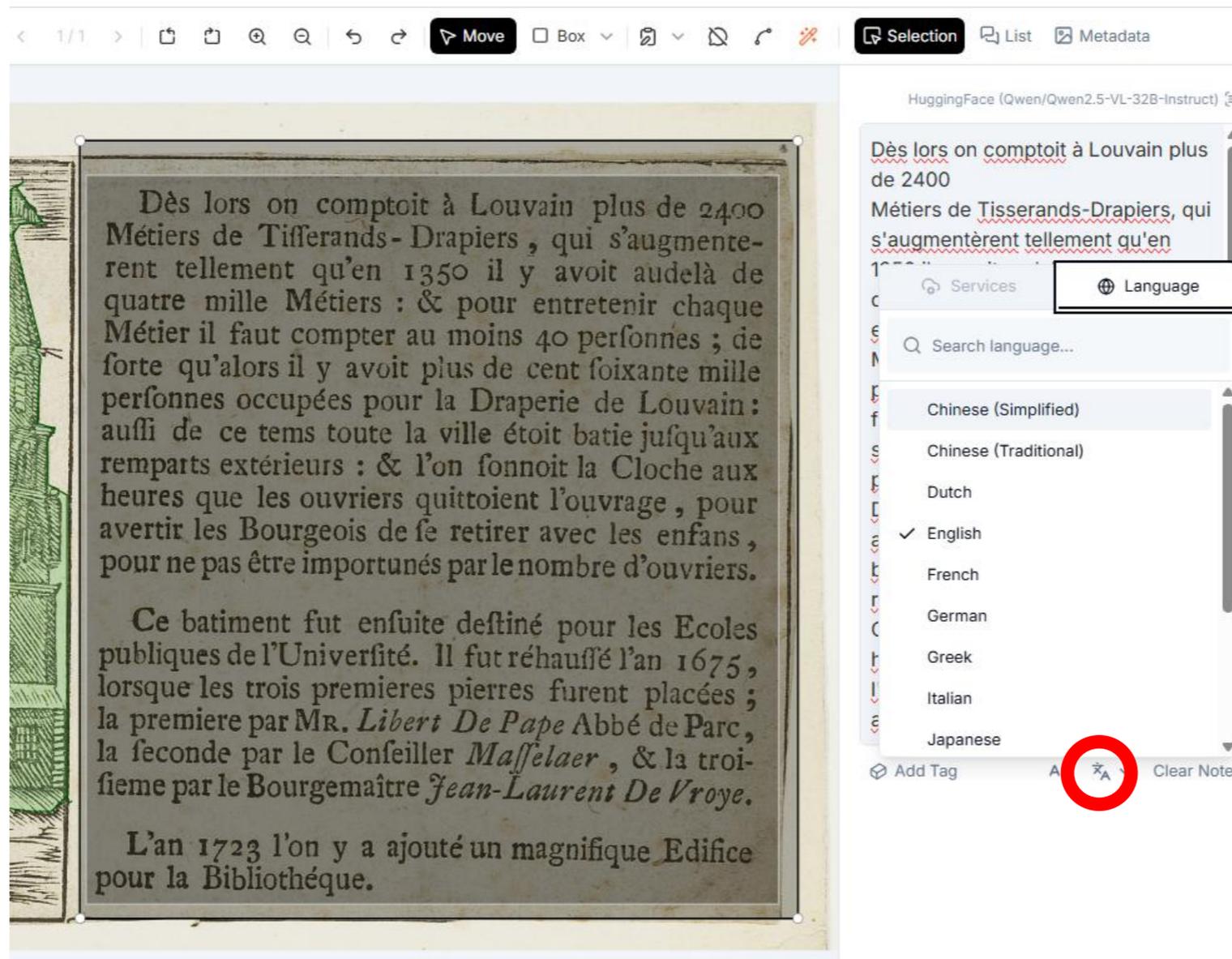
1 Annotations **Import to IMMARKUS**

Document Text:
Dès lors on comptoit à Louvain plus de 2400 Métiers de Tisserands- Drapiers , qui s'augmenterent tellement qu'en 1350 il y avoit audelà de quatre mille Métiers : & pour entretenir chaque Métier il faut compter au moins 40 personnes ; de forte qu'alors il y avoit plus de cent soixante mille personnes occupées pour la Draperie de Louvain : aussi de ce tems toute la ville étoit batie jusqu'aux remparts extérieurs : & l'on fonoit la Cloche aux heures que les ouvriers quittoient l'ouvrage, pour avertir les Bourgeois de se retirer avec les enfans, pour ne pas être importunés par le nombre d'ouvriers. Ce batiment fut ensuite destiné pour les Ecoles publiques de l'Université. Il fut réhaussé l'an 1675, lorsque les trois premieres pierres furent placées ; la premiere par Mr. Libert De Pape Abbé de Parc, la seconde par le Conseiller Masselaer, & la troisieme par le Bourgemaître Jean-Laurent De Vroye. L'an 1723 l'on y a ajouté un magnifique Edifice pour la Bibliothèque.

Transcribing Text from Images

5. After importing, click **Show Translation (red circle)**

6. Select the translation service model and the **target language**



Transcribing Text from Images

7. View the translated version of the transcription

TA00500

Move Box Selection List Metadata



Dès lors on comptoit à Louvain plus de 2400 Métiers de Tisserands-Drapiers, qui s'augmenterent tellement qu'en 1350 il y avoit audelà de quatre mille Métiers: & pour entretenir chaque Métier il faut compter au moins 40 personnes; de sorte qu'alors il y avoit plus de cent soixante mille personnes occupées pour la Draperie de Louvain: aussi de ce tems toute la ville étoit batié jusqu'aux remparts extérieurs: & l'on sonnoit la Cloche aux heures que les ouvriers quittoient l'ouvrage, pour avertir les Bourgeois de se retirer avec les enfans, pour ne pas être importunés par le nombre d'ouvriers.

Ce bâtiment fut ensuite destiné pour les Ecoles publiques de l'Université. Il fut réhaussé l'an 1675, lorsque les trois premières pierres furent placées; la première par Mr. *Libert De Pape* Abbé de Parc, la seconde par le Conseiller *Maffelaer*, & la troisième par le Bourgeois *Jean-Laurent De Vroye*.

L'an 1723 l'on y a ajouté un magnifique Edifice pour la Bibliothèque.

From then on, there were more than 2400 weaving trades in Louvain - Drapers, which increased so much that by 1350 there were more than four thousand trades: and to maintain each trade, at least 40 people had to be counted; so that at that time there were more than one hundred and sixty thousand people employed in the drapery trade in Louvain: also at that time the whole city was built up to the outer ramparts: and the bell was rung at the hours when the workers left work, to warn the citizens to withdraw with their children, so as not to be bothered by the number of workers. This building was subsequently intended for the public schools of the University. It was rebuilt in 1675, when the first three stones were laid; the first by Mr. *Libert De Pape*, Abbot of Parc, the second by Councilor *Maffelaer*, and the third by Mayor *Jean-Laurent De Vroye*. In 1723, a magnificent building was added for the Library.

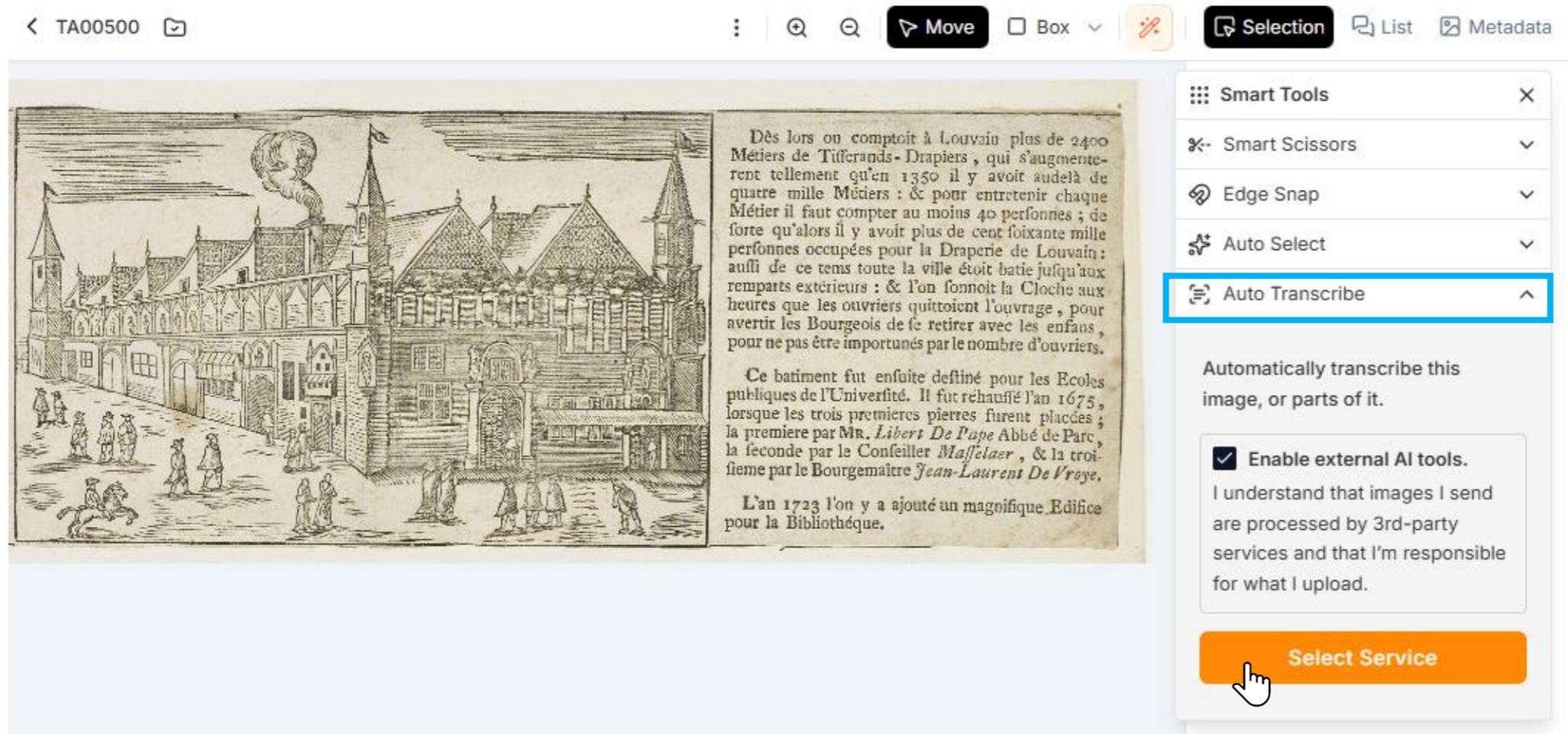
Add Tag AA ~~A~~ Clear Note

Save

Delete Annotation

Break (15 minutes)

- Questions or comments?
- You can also try Auto Transcribe and review the results.



TA00500

Move Box Selection List Metadata

Smart Tools X

Smart Scissors v

Edge Snap v

Auto Select v

Auto Transcribe ^

Automatically transcribe this image, or parts of it.

Enable external AI tools.
I understand that images I send are processed by 3rd-party services and that I'm responsible for what I upload.

Select Service

Dès lors on comptoit à Louvain plus de 2400 Méiers de Tisserands-Drapiers, qui s'augmenterent tellement qu'en 1350 il y avoit audelà de quatre mille Méiers : & pour entretenir chaque Méier il faut compter au moins 40 personnes ; de sorte qu'alors il y avoit plus de cent soixante mille personnes occupées pour la Draperie de Louvain : aussi de ce tems toute la ville étoit batié jusqu'aux remparts extérieurs : & l'on sonnoit la Cloche aux heures que les ouvriers quittoient l'ouvrage, pour avertir les Bourgeois de se retirer avec les enfans, pour ne pas être importunés par le nombre d'ouvriers.

Ce bâtiment fut ensuite destiné pour les Ecoles publiques de l'Université. Il fut réhaussé l'an 1675, lorsque les trois premières pierres furent placées ; la première par Mr. *Libert De Pape* Abbé de Parc, la seconde par le Conseiller *Maffelaer*, & la troisième par le Bourgeois *Jean-Laurent De Vroye*.

L'an 1723 l'on y a ajouté un magnifique Édifice pour la Bibliothèque.

3. What Is a Data Model?

A data model defines:

- What **things** you record (**Entity**)

Entity Class

obj_part

bridge_gate

city_wall_barbican

city_wall_gate

object

city_wall

bridge

landform

water

Entity Class * Color

city_wall Color: #5f3274

Display Name

Parent Class

object

Entity Class Description

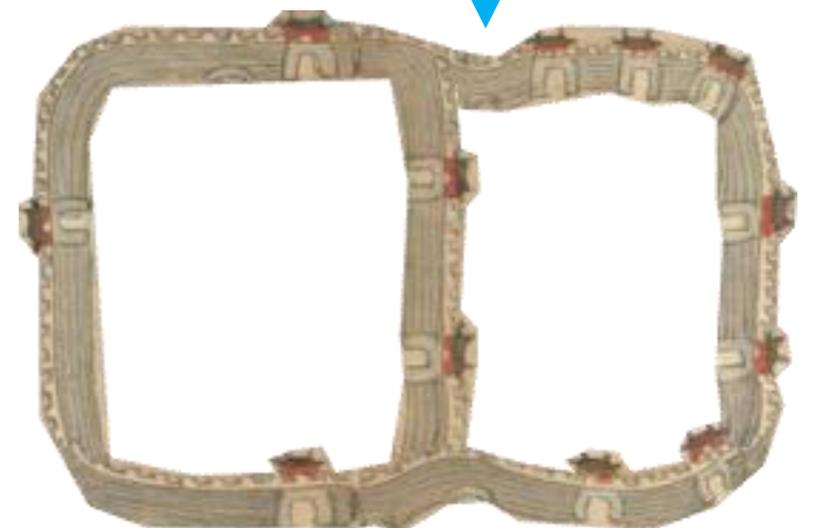
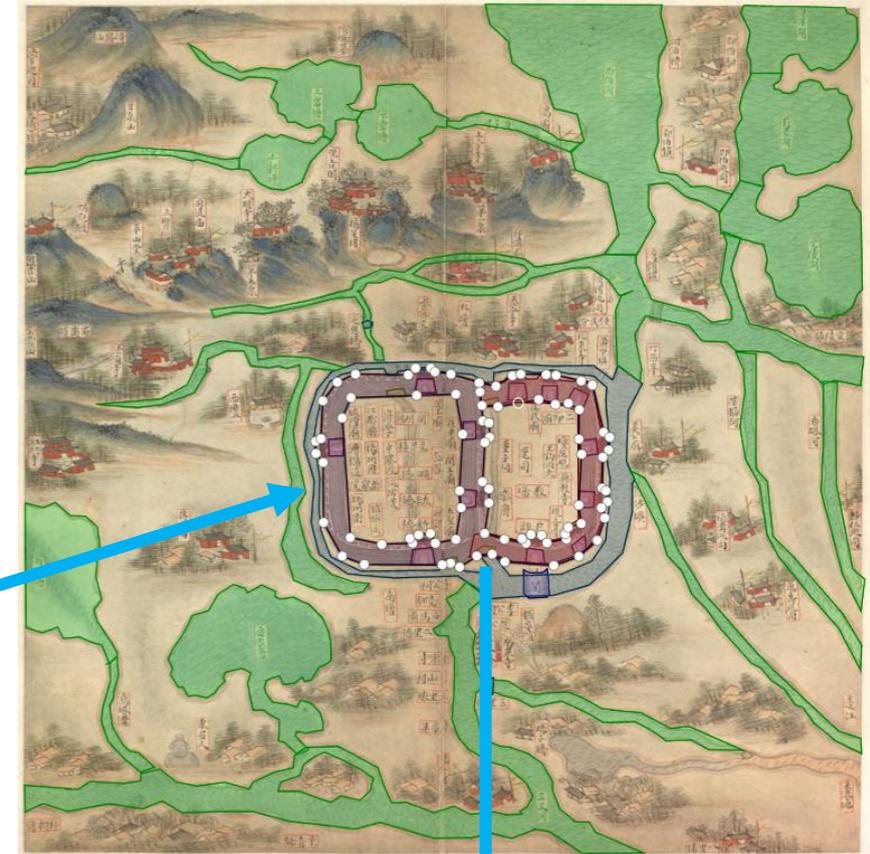
A fortified structure surrounding the center of a civilian administrative unit (府, 州, 縣) to defend its inhabitants and buildings from external threats.

2 Properties

road_presence

wall_phase

Add Property



- What details each entity has (Property)



city_wall

id ⓘ

yangzhou_cheng

name ⓘ

揚州府城

descriptor ⓘ

TGAZ ⓘ

Q TGAZ ⓘ

<https://maps.cga.harvard.edu/tgaz/...>

DILA_PL ⓘ

Q DILA (Place) ⓘ

texture ⓘ

striped

Add value

color ⓘ

#aa9a7c

road_presence ⓘ

none

- How they relate (Relationship)

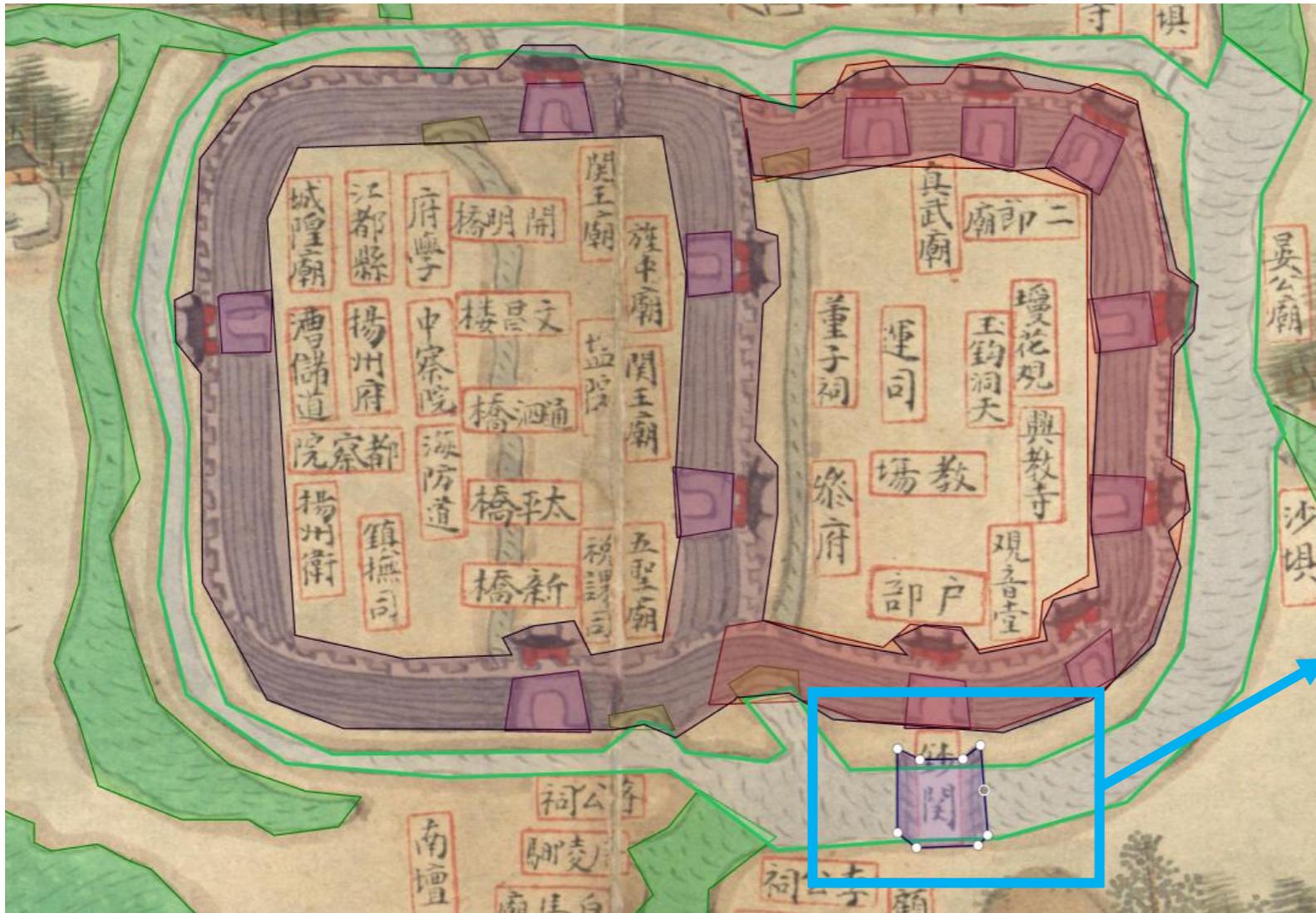
Relationship Name

Directed Relation
Enable this option if the relationship is meant to be directional, in the sense that source and target roles are relevant.

Relationship Type Description

Used to connect a bridge with the feature it crosses such as a river, moat, or road.

Restrict source entity class
The relationship can only start on annotations with this entity class.



color  #816f59 

bridge_type ⓘ floating bridge

relation to wall extramural

bridge_pillar_quant ⓘ

bridge_cover ⓘ no

Related Annotations

 crossing  

 Add Tag  Add Note

Save

 Delete Annotation

A data model defines:

- What **things** you record (**Entity**)
- What **details** each entity has (**Property**)
- How they **relate** (**Relationship**)

Example:

Figure (Mythological or Human)

- ID
- Name
- Garment_type
- Garment_color
- Holding (A **figure** holding an **artifact**)

Landform

- ID
- Name
- Type
- Location

Infrastructure

- ID
- Name
- Type
- Dimension_height
- Dimension_width
- Crossing (An **infrastructure** crossing another feature)

Artifact

- ID
- Name
- Type
- Material
- Location_current
- Inscription_YN

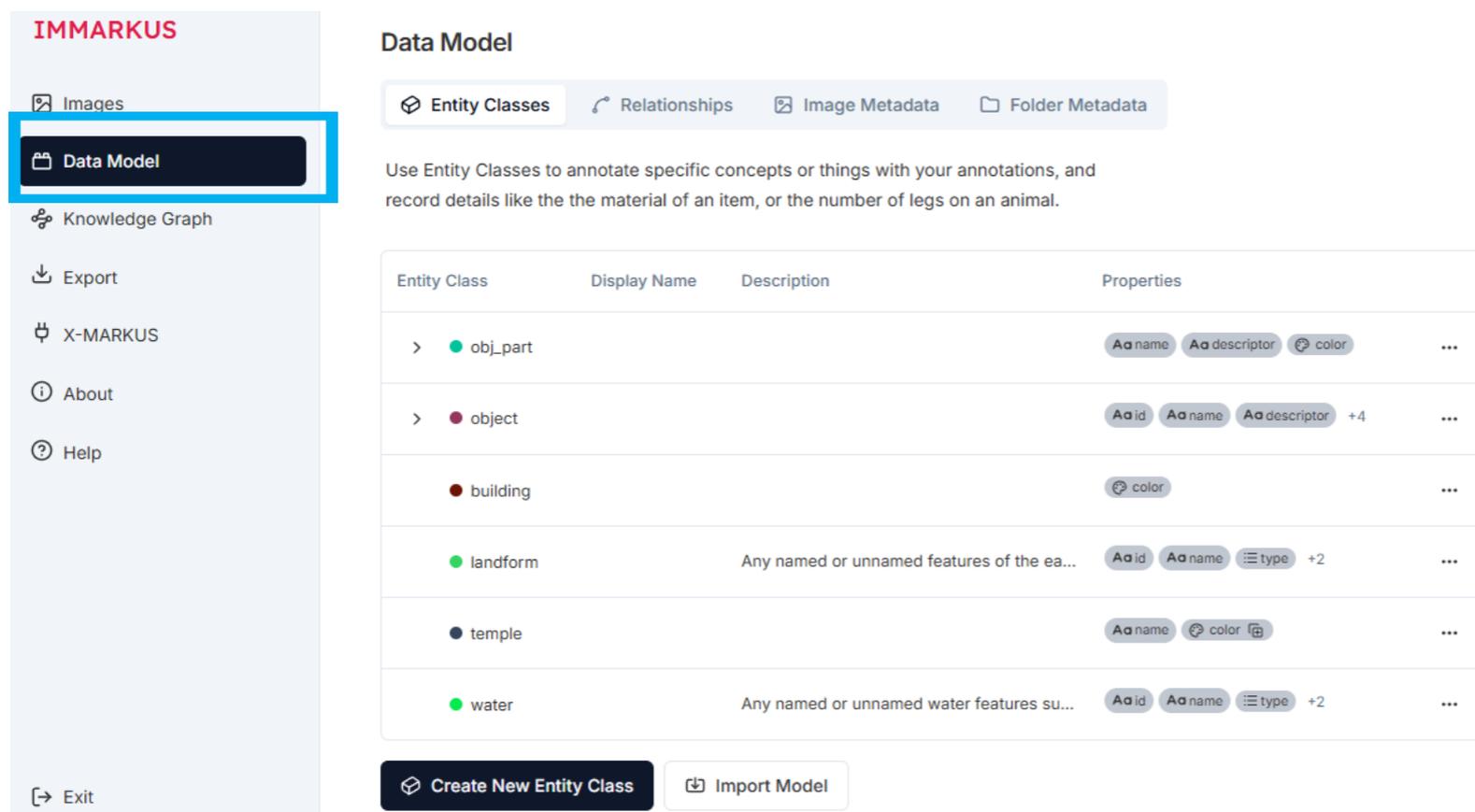
Why Use a Data Model?

- Ensures consistency across annotations
- Makes annotations searchable and comparable
- Enables complex queries and structured exports

When you annotate, you are already shaping a data model.

To view your current data model:

1. Click on **Data Model** on the left-hand menu bar
2. Navigate what you have created during the annotation practices



IMMARKUS

Images

Data Model

Knowledge Graph

Export

X-MARKUS

About

Help

Exit

Data Model

Entity Classes Relationships Image Metadata Folder Metadata

Use Entity Classes to annotate specific concepts or things with your annotations, and record details like the the material of an item, or the number of legs on an animal.

Entity Class	Display Name	Description	Properties
> obj_part			Aa name Aa descriptor color ...
> object			Aa id Aa name Aa descriptor +4 ...
building			color ...
landform		Any named or unnamed features of the ea...	Aa id Aa name type +2 ...
temple			Aa name color ...
water		Any named or unnamed water features su...	Aa id Aa name type +2 ...

Create New Entity Class Import Model

Data Models in IMMARKUS

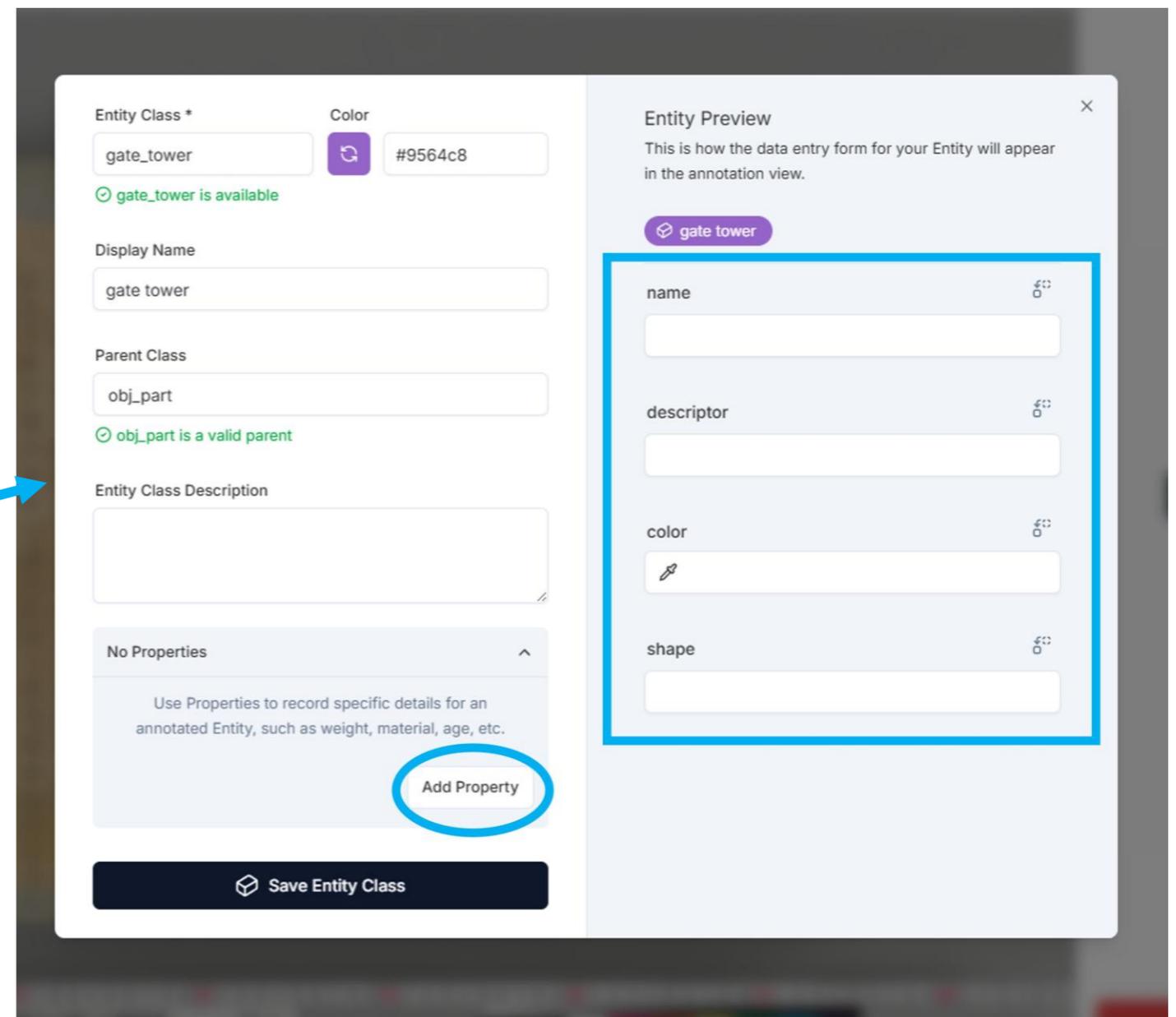
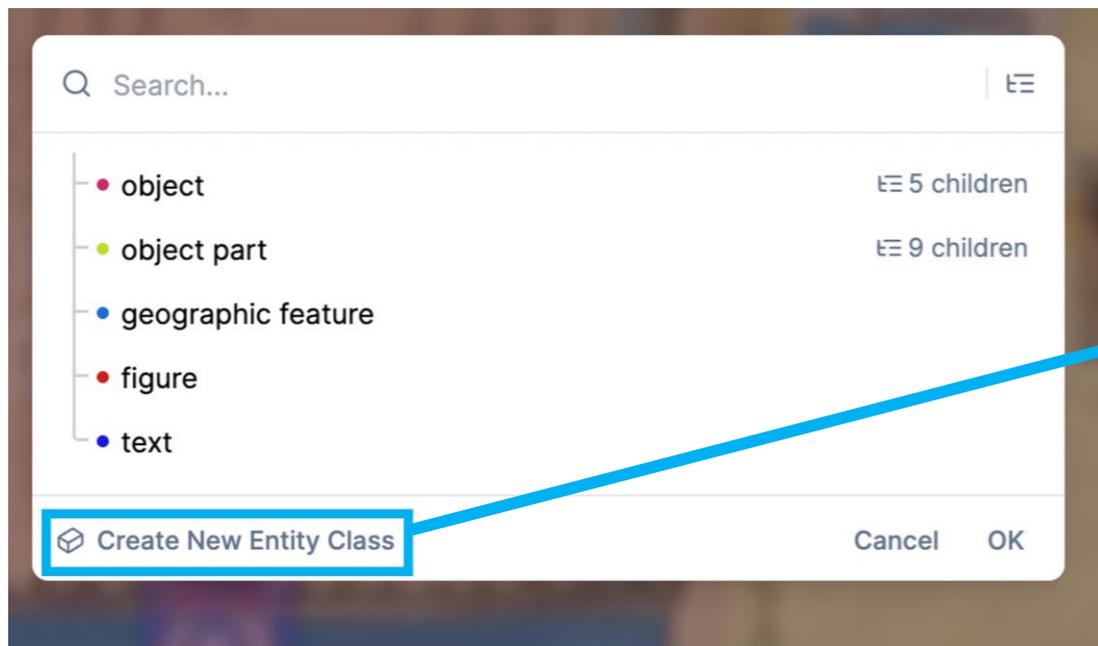
Define schema (entity classes, properties, relationships and metadata) directly in **Data Model Mode**

The screenshot displays the IMMARKUS interface in Data Model Mode. On the left is a sidebar with navigation options: Images, Data Model (highlighted), Knowledge Graph, Export, X-MARKUS, About, and Help. The main content area is titled 'Data Model' and includes tabs for Entity Classes, Relationships, Image Metadata, and Folder Metadata. Below the tabs is a descriptive text: 'Use Entity Classes to annotate specific concepts or things with your annotations, and record details like the the material of an item, or the number of legs on an animal.' A table lists several entity classes with their display names, descriptions, and associated properties.

Entity Class	Display Name	Description	Properties
▼ settlement			conectivity, location to the city, ...
suburban house			...
farm_house			...
animal_figure			name, type, ...
bridge			...
church			name, URL, ...

Data Models in IMMARKUS

Create or expand schema (new entity classes, properties, and relationships) in **Annotation Mode**



Data Models in IMMARKUS

Import / Reuse data model from other projects in **Data Model Mode**

Data Model

Entity Classes Relationships Image Metadata Folder Metadata

Use Entity Classes to annotate specific concepts or things with your annotations, and record details like the the material of an item, or the number of legs on an animal.

Entity Class	Display Name	Description	Properties
> ● figure	figure		Aa descriptor ...
> ● geo_feature	geo_feature		Aa name Aa descriptor ...
> ● obj_part	obj_part		Aa name Aa descriptor ☰ color +2 ...
> ● object	object		Aa id Aa name Aa location +4 ...
> ● text	text		Aa descriptor # number ↶ relation_test ...

Create New Entity Class

Import Model

Import Entity Classes

Replace Current Model

You can either delete and replace your existing model, or add the imported classes to your current model.



How to Handle Duplicate Classes

Select how the import should merge classes that already exist in your model.

Keep Existing

If the import contains classes that already exist in your model, keep the existing ones and discard the imported classes.

Keep Imported

If the import contains classes that already exist in your model, discard the existing ones and keep the imported classes.

Upload Datamodel File

Use files downloaded from Export / Data Model.

Tips

Make use of **external authorities** to connect your entities to other knowledge bases

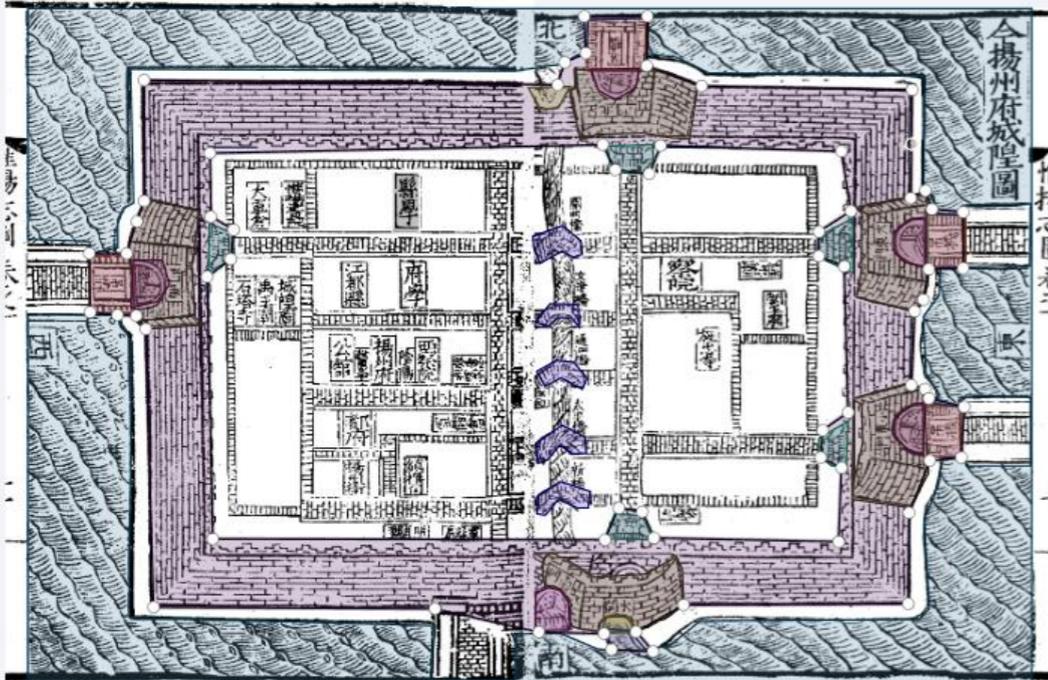
Data Type

 External Authority 

- TGAZ**
China Historical GIS placename database
- Wikipedia**
The free encyclopedia (English)
- Baidu**
Baidu encyclopedia
- CBDB**
China Biographical Database Project
- DILA (Person)**
Buddhist Studies Authority Database Project (Person Search)
- DILA (Place)**
Buddhist Studies Authority Database Project (Place Search)
- Manchu**
Manchu texts and objects
- Digerati**
Korean personal names
- Hucker Dictionary**
A Dictionary of Official Titles in Imperial China

 **Select at least one authority**

Allow multiple values



city_wall

id: yangzhou_cheng

name: 揚州城

descriptor:

TGAZ: hvd_33309

DILA_PL:

texture: bond_pattern

color:

road_presence: intramural

TGAZ API URI :: https://chgis.hudci.org/tgaz/placename/hvd_33309

JSON XML RDF

placename:

揚州府 (traditional Chinese)

扬州府 (simplified Chinese)

Yangzhou Fu (Pinyin)

type: 府 府 fu superior prefecture

temporal span: from 1366 to 1911

spatial info: POINT point N 32.39127 E 119.43719 (geo data source: FROM_AC)

part of:

[江南行省 Jiangnan Xings](#) from 1366 to 1367

[南京 Nanjing](#) from 1368 to 1377

[京师 Jingshi](#) from 1378 to 1402

[南京 Nanjing](#) from 1403 to 1424

[京师 Jingshi](#) from 1425 to 1440

[南京 Nanjing](#) from 1441 to 1644

[江南省 Jiangnan Sheng](#) from 1645 to 1666

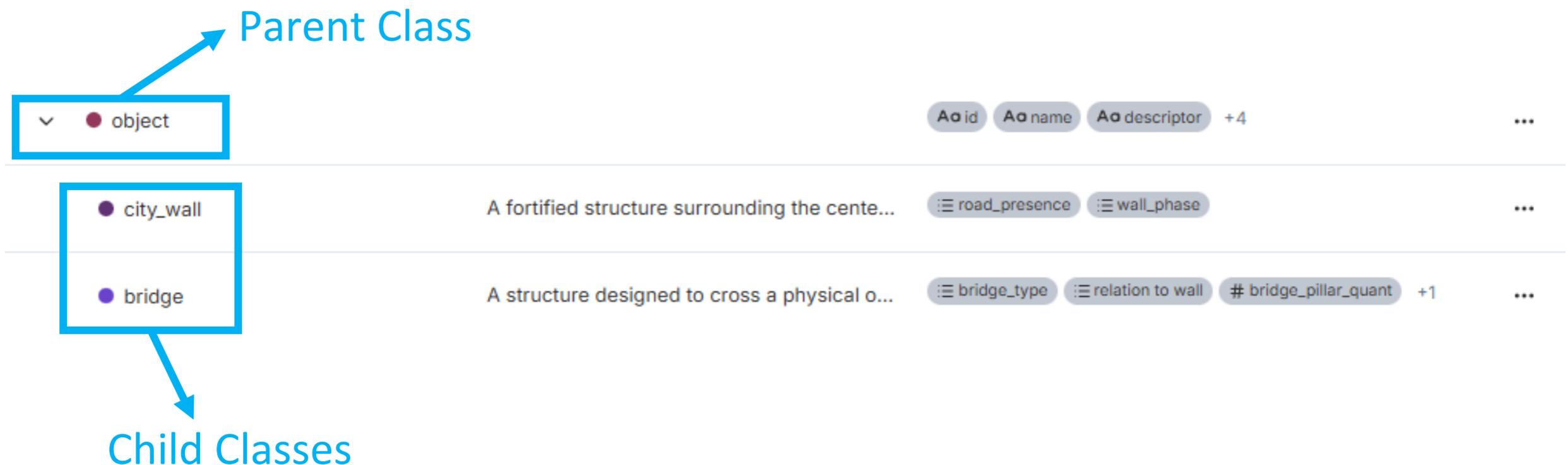
[江苏省 Jiangsu Sheng](#) from 1667 to 1911

Linking an annotated place to its identifier in the Chinese Historical GIS placename database

Tips

Make use of **parent-child class hierarchies** to avoid duplicating properties for entities that share certain characteristics

- A parent class defines common properties once
- Child classes inherit all properties from parent
- Child classes can also have their own unique properties
- Ensures consistency while allowing flexibility



Entity Class *

object

Color



#94375c

Display Name

Parent Class

Entity Class Description

7 Properties



Save Entity Class

Entity Preview



This is how the data entry form for your Entity will appear in the annotation view.

object

id ⓘ

name ⓘ

descriptor ⓘ

TGAZ ⓘ

Q TGAZ

DILA_PL ⓘ

Q DILA (Place)

texture ⓘ

Add value

color

Parent class
"object" has 7
properties

Entity Class *
bridge

Color
#6a42cc

Display Name

Parent Class
object

Entity Class Description
A structure designed to cross a physical obstacle, such as a river.

4 Properties

Save Entity Class

Entity Preview

This is how the data entry form for your Entity will appear in the annotation view.

bridge

A structure designed to cross a physical obstacle, such as a river.

id

name

descriptor

TGAZ

DILA_PL

texture

color

bridge_type

relation to wall

bridge_pillar_quant

bridge_cover

Child class “bridge” inherits all 7 properties from its parent class “object”

It also carries its own unique properties

Practice 4. Adding a Child Class to Your Data Model

1. Click **Data Model** on the left-hand menu bar
2. Click **Create New Entity Class**
3. Type the name of your new entity class
4. Type one of the existing entity class name in the **Parent Class** field

Parent Class

👍 object is a valid parent

5. Click **Save Entity Class**

Working with Metadata

- The data about your data: **what** something is, **who** made it, **when** and **where** it comes from
- Supports **citations**, **reuse**, and **data linking**

The screenshot displays a metadata management interface. On the left, a folder view shows two folders: '0616_yangzhou_map_IMMARMKUS_revised'. Below the folder view, two items are listed: '嘉靖_惟揚志_92877' (1 Image) and 'Yangzhou Fu tu shuo' (26 Canvases). A blue arrow points from the 'Yangzhou Fu tu shuo' folder to a detailed metadata form on the right. The form is titled 'My' and has a 'Schema' dropdown set to 'artwork'. It contains several fields for metadata: 'Image_title_ch' (揚州府圖說), 'Image_title_py' (Yangzhou Fu tu shuo), 'Image_title_en' (Illustrated Album of Yangzhou Prefecture), 'Image_author' (anonymous), 'CBDB' (with a search icon and 'CBDB' text), 'DILA_ps' (with a search icon and 'DILA (Person)' text), and 'Publication_place'.

Metadata in IMMARKUS

For IIF images, the embedded metadata is automatically retrieved and displayed.

The screenshot displays the IMMARKUS interface. On the left is a sidebar with navigation options: Images (selected), Data Model, Knowledge Graph, Export, X-MARKUS, About, and Help. The main area shows a folder titled "Leuven University Hall" containing five IIF image thumbnails. A context menu is open over the first thumbnail, listing options: Metadata, Manifest Metadata, Open Canvas, Canvas Metadata, Other IIF Viewers, and Delete. A blue box highlights the "Manifest Metadata" option, with an arrow pointing to a metadata panel on the right. This panel, titled "IIF", displays the following information:

- Terms and conditions:** This object is available as open data - [terms and conditions](#)
- Title:** Université de Louvain - Les Halles (façade principale). Vue prise par un temps de neige
- Location:** KU Leuven Libraries Special Collections, TA00503
- Full description:** Includes the Limo logo.
- Material type:** Graphic
- Genre:** Topographical pictures

Metadata in IMMARKUS

You can also edit and save metadata for IIF resources using your own schema.

The screenshot displays the IMMARKUS interface. On the left is a sidebar with navigation options: Images, Data Model, Knowledge Graph, Export, X-MARKUS, About, and Help. The main area shows a folder titled "Leuven University Hall" containing five IIF resource thumbnails. A context menu is open over the first thumbnail, with "Metadata" and "Canvas Metadata" highlighted. A blue arrow points from the "Canvas Metadata" option to a metadata editor window on the right. The editor window has a tab labeled "My" and contains the following fields:

- title:** Université de Louvain - Les Halles (façad
- date:** 1896 - End...
- topographical details:** lithograph(s) line block
- additional info:** Biographical or historical data: Gezicht c
- creator:** Francois Gailliard (with an "Add value" button)
- creator_wikidata:** <https://www.wikidata.org/wiki/...> (with an "Add value" button)

Defining image metadata schema based on the details section of the resource

Details

Title	University of Louvain - Les Halles (main façade). View taken on a snowy day
Contributor	Gailliard, Francois (Belgian painter, 1861-1932) (artist) >
Date	1896
Series	Leuven. Civil buildings > Leuven. Straten > Leuven. University buildings >
Gender	Topographical pictures
Extent	Representation: 265 x 222 mm Representation with inscription: 274 x 222 mm. Graphic Black-and-white ;
Language	French
Typographical details	lithograph(s) line block
Additional info	Biographical or historical data: View of the entrance hall of the University Hall seen from the Zeelstraat. Some houses in the Naamsestraat are also visible. In the Zeelstraat, a boy throws a snowball at a woman with an umbrella. There are 4 students in front of the entrance. illustration from Le Patriote Illustré, 1-11-1896 Inscriptions: F. GAILLIARD (in the performance: bottom, right) Registration: University of Louvain - Les Halles (main façade). View taken in snowy weather (buiten de voorstelling: onderaan, centraal)
Source	Library Catalog

IMMARKUS

- Images
- Data Model**
- Knowledge Graph
- Export
- X-MARKUS
- About
- Help

Data Model

Entity Classes Relationships **Image Metadata** Folder Metadata

Use schemas to record structured information about your images, such as title, author or source. Create multiple schemas to describe different types of images, e.g. 'artwork', 'historical printed illustration', or 'archaeological image'.

Schema	Description	Properties
Topographical pictures		Aa title <-> date Aa topographical details +7 ...

New Image Schema Import Model

Schema Name: Topographical pictures
Topographical pictures is available

Schema Description

- Aa title
- <-> date
- Aa topographical details
- Aa additional info
- Aa creator
- <-> creator_wikidata
- Aa engraver
- <-> engraver_wikidata
- Aa publisher
- <-> resource_url

Add Property

Save Schema

Preview

This is how the data entry form for your metadata schema will appear.

- title
- date
- topographical details
- additional info
- creator
- creator_wikidata
- engraver
- engraver_wikidata

Entering image metadata in the customized schema

Details	
Title	University of Louvain - Les Halles (main façade). View taken on a snowy day
Contributor	Gailliard, Francois (Belgian painter, 1861-1932) (artist) >
Date	1896
Series	Leuven. Civil buildings > Leuven. Straten > Leuven. University buildings >
Gender	Topographical pictures
Extent	Representation: 265 x 222 mm Representation with inscription: 274 x 222 mm. Graphic Black-and-white ;
Language	French
Typographical details	lithograph(s) line block
Additional info	Biographical or historical data: View of the entrance hall of the University Hall seen from the Zeelstraat. Some houses in the Naamsestraat are also visible. In the Zeelstraat, a boy throws a snowball at a woman with an umbrella. There are 4 students in front of the entrance. illustration from Le Patriote Illustré, 1-11-1896 Inscriptions: F. GAILLIARD (in the performance: bottom, right) Registration: University of Louvain - Les Halles (main façade). View taken in snowy weather (buiten de voorstelling: onderaan, centraal)
Source	Library Catalog

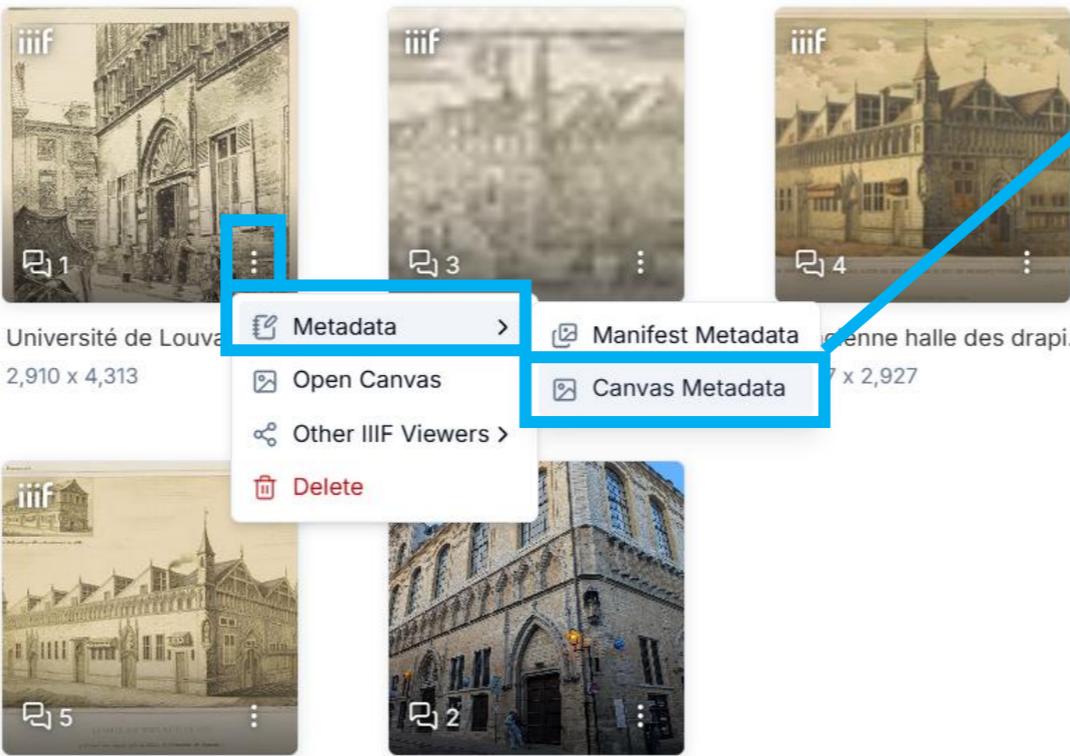
IMMARKUS

- Images
- Data Model
- Knowledge Graph
- Export
- X-MARKUS
- About
- Help

Exit

Folder
Leuven University Hall

Metadata Import IIIIF Hide unannotated Grid



Universit  de Louva
2,910 x 4,313

La Halle aux Draps
2,919 x 2,509

University Hall_photo.jpeg
2,040 x 1,536

Metadata > Manifest Metadata > Canvas Metadata > Canvas Metadata > Other IIIIF Viewers > Delete

{ } IIIIF My X

title
Universit  de Louvain - Les Halles (fa ac

date
1896 - End...

topographical details
lithograph(s) line block

additional info
Biographical or historical data: Gezicht c

creator
Francois Gailliard
Add value

creator_wikidata
<https://www.wikidata.org/wiki/...>
Add value

Linking a creator to their Wikidata identifier in the metadata model

Franz Gailliard (Q2113391)

Item Discussion

Read View history Tools

Belgian painter (1861-1932)
Francois Gailliard

edit

In more languages
Configure

Language	Label	Description	Also known as
default for all languages	No label defined	-	
English	Franz Gailliard	Belgian painter (1861-1932)	Francois Gailliard
Dutch	Franz Gailliard	Belgisch kunstschilder (1861-1932)	
French	Franz Gailliard	peintre belge	
German	Francois Gailliard	belgischer Maler, Radierer und Illustrator	Franz Gailliard

IMMARKUS

Images

Data Model

Knowledge Graph

Export

X-MARKUS

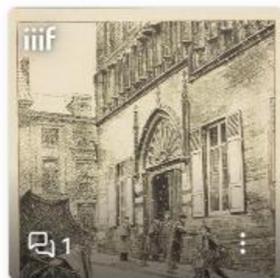
About

Help

Folder

Leuven University Hall

Metadata Import IIIF Show unannotated Grid



Université de Louvain - Le...
2.910 x 4.313



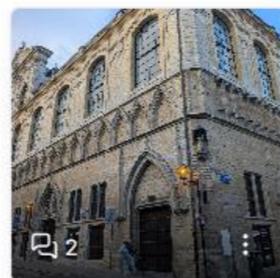
véritable représentation de...
4.259 x 1.314



L'ancienne halle des drapi...
4.037 x 2.927



La Halle aux Draps
2.919 x 2.509



University Hall_photo.jpeg
2.040 x 1.536

IIIF My

title

Université de Louvain - Les Halles (façad

date

1896 - End...

topographical details

lithograph(s) line block

additional info

Biographical or historical data: Gezicht o

creator

Francois Gailliard

Add value

creator_wikidata

<https://www.wikidata.org/wiki/...>

Add value



Metadata in IMMARKUS

Or you can import preset schemas (e.g. 'archaeological image', 'artwork', and 'historical printed illustration') in **Data Model Mode**.

IMMARKUS

- Images
- Data Model**
- Knowledge Graph
- Export
- X-MARKUS
- About
- Help

Data Model

Entity Classes Relationships Image Metadata Folder Metadata

Use schemas to record structured information about your images, such as title, author or source. Create multiple schemas to describe different types of images, e.g. 'artwork', 'historical printed illustration', or 'archaeological image'.

Schema	Description	Properties
Topographical pictures		Aa title <-> date Aa topographical details +6 ...

New Image Schema

Import Model

Import Image Schemas

Replace Current Model

You can either delete and replace your existing model, or add the imported schemas to your current model.

How to Handle Duplicate Schemas

Select how the import should merge schemas that already exist in your model.

- Keep Existing**
If the import contains schemas that already exist in your model, keep the existing ones and discard the imported schemas.
- Keep Imported**
If the import contains schemas that already exist in your model, discard the existing ones and keep the imported schemas.

Import from Preset

archaeological image
artwork
historical printed illustration

Preset image metadata schema for “historical printed illustration”

Preset image metadata schema for “artwork”

Schema Name
historical printed illustration
✔ historical printed illustration is available

Schema Description

- Aa Volume
- Aa Page
- Aa Image_title
- Aa Image_format
- Aa Pixel_h
- Aa Pixel_w
- # Image_no
- # Image_id
- ↔ Image_url

Add Property

Save Schema

Preview
This is how the data entry form for your metadata schema will appear.

Volume

Page

Image_title

Image_format

Pixel_h

Pixel_w

Image_no

Image_id

Schema Name
artwork
✔ artwork is available

Schema Description

- Aa Image_title_ch
- Aa Image_title_py
- Aa Image_title_en
- Aa Volume
- Aa Page
- Aa Image_format
- Aa Pixel_h
- Aa Pixel_w
- # Image_no
- # Image_id
- ↔ Image_url

Add Property

Preview
This is how the data entry form for your metadata schema will appear.

Image_title_ch

Image_title_py

Image_title_en

Volume

Page

Image_format

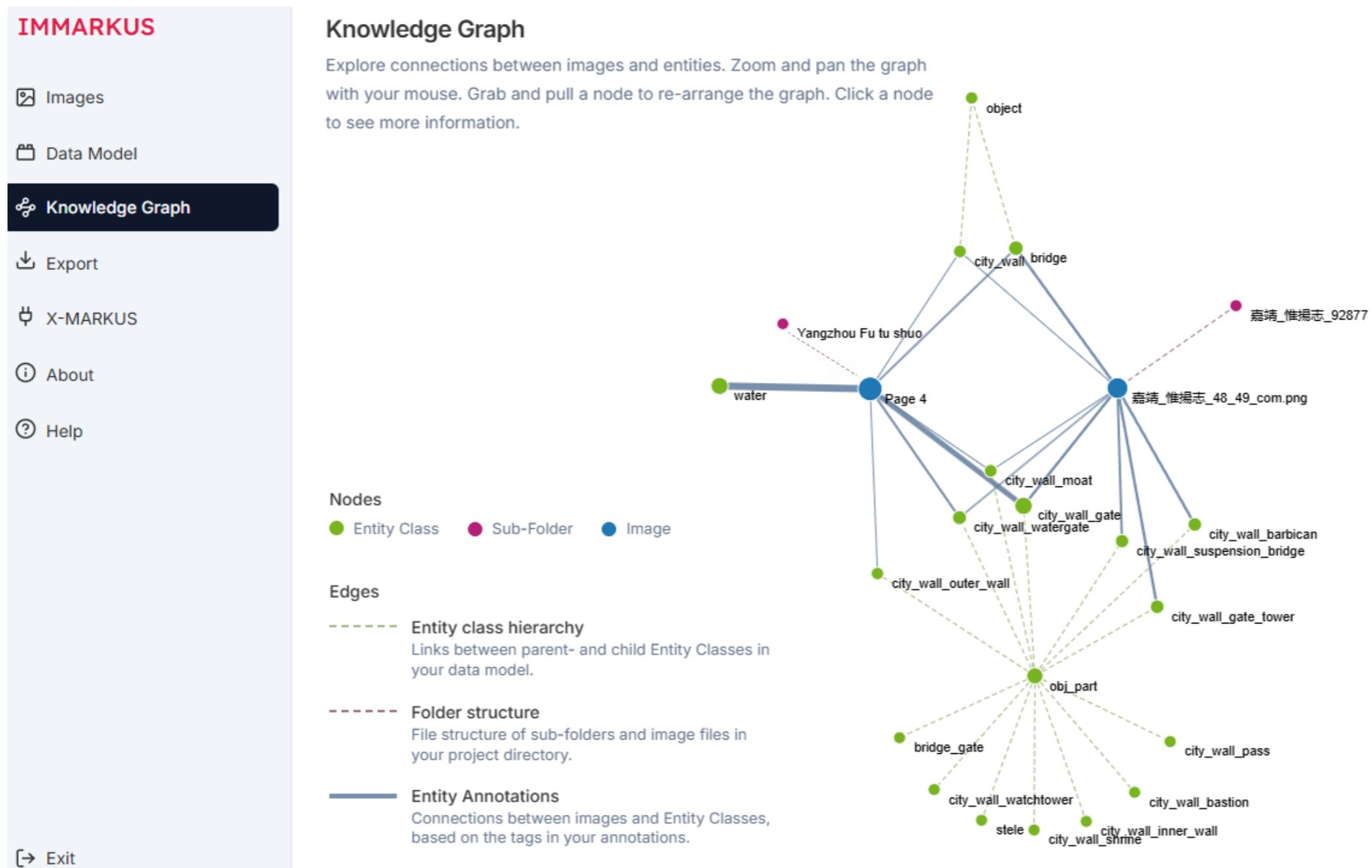
Pixel_h

Pixel_w

You can modify and expand preset schemas

4. Visualising and Querying Annotations

Graph view helps reveal patterns and connections across annotations and their sources.



Hovering over and clicking nodes to view the connections and annotations

IMMARKUS

- Images
- Data Model
- Knowledge Graph**
- Export
- X-MARKUS
- About
- Help

[→] Exit

Knowledge Graph

Explore connections between images and entities. Zoom and pan the graph with your mouse. Grab and pull a node to re-arrange the graph. Click a node to see more information.

The graph displays two entity classes (green nodes) and five images (blue nodes). The entity class 'facade statue' is connected to 'LM00025' and 'TA00522'. The entity class 'hall building' is connected to 'LM00025', 'TA00503', 'TA00500', and 'University Hall_photo.jpeg'. The image 'University Hall_photo.jpeg' is also connected to 'facade statue'.

```
graph LR; facade_statue((facade statue)) --- LM00025((LM00025)); facade_statue --- TA00522((TA00522)); LM00025 --- hall_building((hall building)); TA00503 --- hall_building; TA00500 --- hall_building; University_Hall_photo_jpeg((University Hall_photo.jpeg)) --- hall_building; University_Hall_photo_jpeg --- facade_statue;
```

Nodes

- Entity Class
- Image

Edges

- Entity class hierarchy**
Links between parent- and child Entity Classes in your data model.
- Entity Annotations**
Connections between images and Entity Classes, based on the tags in your annotations.

Settings

Clicking sub-folder nodes ● to view the collection details

IMMARKUS

- Images
- Data Model
- Knowledge Graph**
- Export
- X-MARKUS
- About
- Help

Knowledge Graph

Explore connections between images and entities. Zoom and pan the graph with your mouse. Grab and pull a node to re-arrange the graph. Click a node to see more information.

Universit  de Louvain - Les Halles (faade princip...)

Nodes

- Entity Class
- Sub-Folder
- Image

Edges

- Entity class hierarchy**
Links between parent- and child Entity Classes in your data model.
- Folder structure**
File structure of sub-folders and image files in your project directory.
- Entity Annotations**
Connections between images and Entity Classes, based on the tags in your annotations.

Exit

Settings

Universit  de Louvain - Les Halles (f... X

1 Images **Open**

{ } IIF My

Terms and conditions
This object is available as open data - [terms and conditions](#)

Title
Universit  de Louvain - Les Halles (faade principale). Vue prise par un temps de neige

Location
KU Leuven Libraries Special Collections, TA00503

Full description
 **Limo**

Material type
Graphic

Genre
Topographical pictures

Clicking image nodes ● to view the image details

IMMARKUS

- Images
- Data Model
- Knowledge Graph**
- Export
- X-MARKUS
- About
- Help

Exit

Knowledge Graph

Explore connections between images and entities. Zoom and pan the graph with your mouse. Grab and pull a node to re-arrange the graph. Click a node to see more information.

Nodes

- Entity Class
- Sub-Folder
- Image

Edges

- Entity class hierarchy**
Links between parent- and child Entity Classes in your data model.
- Folder structure**
File structure of sub-folders and image files in your project directory.
- Entity Annotations**
Connections between images and Entity Classes, based on the tags in your annotations.

```
graph LR; A(( )) --- B(( )) --- C(( ))
```



TA00522
4.037 x 2.927 px

4 0 Metadata

() IIIF My

title
L'ancienne halle des drapiers à Louva

date
1800 - 1900

topographical details
lithograph(s)

additional info
Biographical or historical data: Gezicht

creator
Leopold Mommens

Add value

Clicking image nodes ● to view the image details or the annotated shapes within it

IMMARKUS

- Images
- Data Model
- Knowledge Graph**
- Export
- X-MARKUS
- About
- Help

Exit

Knowledge Graph

Explore connections between images and entities. Zoom and pan the graph with your mouse. Grab and pull a node to re-arrange the graph. Click a node to see more information.

Nodes

- Entity Class
- Sub-Folder
- Image

Edges

- Entity class hierarchy
Links between parent- and child Entity Classes in your data model.
- Folder structure
File structure of sub-folders and image files in your project directory.
- Entity Annotations
Connections between images and Entity Classes, based on the tags in your annotations.

TA00522

4.037 x 2.927 px

4 Annotations

- hall building
Ancienne Halle des Drapiers · <https://www.wikidata.org/wiki/Q1...>
- facade statue
- facade statue
- facade statue

Settings

Clicking entity nodes ● to view its annotated shapes

IMMARKUS

- Images
- Data Model
- Knowledge Graph**
- Export
- X-MARKUS
- About
- Help

Knowledge Graph

Explore connections between images and entities. Zoom and pan the graph with your mouse. Grab and pull a node to re-arrange the graph. Click a node to see more information.

```
graph LR; hall_building((hall building)) --- TA00500((TA00500)); hall_building --- TA00503((TA00503)); hall_building --- LM00025((LM00025)); hall_building --- University_Hall_photo_photo[University Hall_photo.jpeg]; hall_building --- TA00522((TA00522));
```

Nodes

- Entity Class
- Sub-Folder
- Image

Edges

- Entity class hierarchy
Links between parent- and child Entity Classes in your data model.
- Folder structure
File structure of sub-folders and image files in your project directory.
- Entity Annotations
Connections between images and Entity Classes, based on the tags in your annotations.

hall building

No description

6 Annotations

- LM00025
La Halle aux Draps -
<https://www.wikidata.org/wiki/Q1>
- 1850 - 1900 - elevation
- La halle -
<https://www.wikidata.org/wiki/Q1>
- 1680 - elevation
- TA00500
Des Halles -
<https://www.wikidata.org/wiki/Q1>
- 1700 - 1750 - elevation
- TA00503
Les Halles -
<https://www.wikidata.org/wiki/Q1>
- 1896 - facade
- TA00522
Ancienne Halle des Drapiers -
<https://www.wikidata.org/wiki/Q1>
- 1800 - 1900 - elevation
- University Hall_photo.jpeg
University Hall -
<https://www.wikidata.org/wiki/Q1>
- 2025 - facade

Exit

Settings

Practice 5. Navigating Your Annotations in the Knowledge Graph

1. Click **Knowledge Graph** on the left-hand menu bar
2. Hover over an **Entity Node** ● to see the entity class hierarchy and its connection with the **Image Node** ●
3. Click an **Image Node** ● to navigate the annotations associated
4. Click **Settings**, then toggle on **Show sub-folders as nodes**
5. Click a **Sub-Folder Node** ● to view the metadata fetched from IIF manifests

Querying Images and Annotations

IMMARKUS

- Images
- Data Model
- Knowledge Graph**
- Export
- X-MARKUS
- About
- Help

[→] Exit

Knowledge Graph

Explore connections between images and entities. Zoom and pan the graph with your mouse. Grab and pull a node to re-arrange the graph. Click a node to see more information.

Graph Search

Find

where is

hall building

TA00503

Nodes

- Entity Class
- Sub-Folder
- Image

Edges

- Entity class hierarchy**
Links between parent- and child Entity Classes in your data model.
- Folder structure**
File structure of sub-folders and image files in your project directory.
- Entity Annotations**
Connections between images and Entity Classes, based on the tags in your annotations.

TA00503
2.910 x 4.313 px

1 Annotations

0

hall building
Les Halles - <https://www.wikidata.org/wiki/Q1...>

Settings

Searching by Entity Class

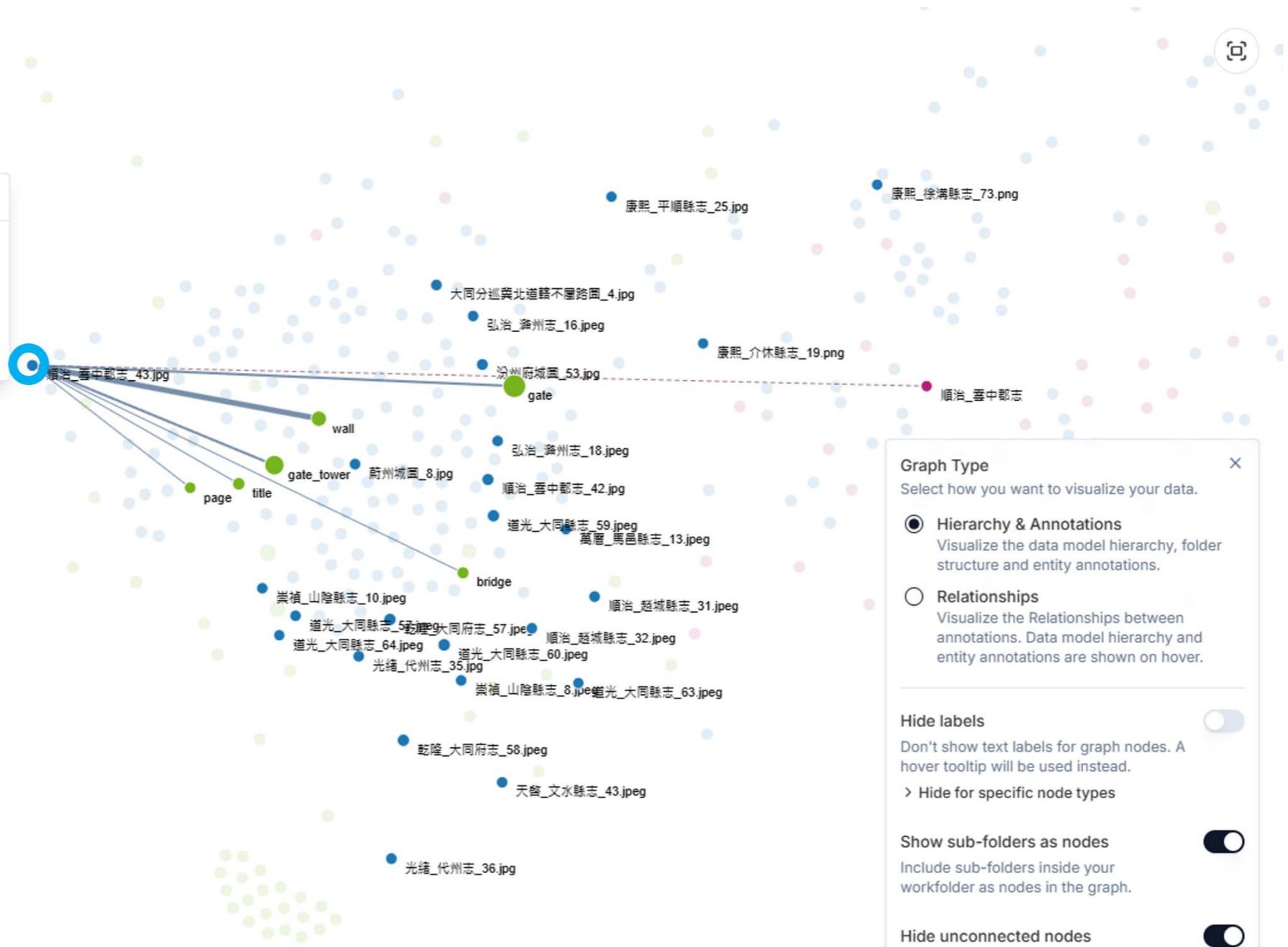
Knowledge Graph

Explore connections between images and entities. Zoom and pan the graph with your mouse. Grab and pull a node to re-arrange the graph. Click a node to see more information.

Graph Search

Find

with entity



Searching by Relationship

Graph Search

Find



Graph Type

Select how you want to visualize your data.

- Hierarchy & Annotations**
Visualize the data model hierarchy, folder structure and entity annotations.
- Relationships**
Visualize the Relationships between annotations. Data model hierarchy and entity annotations are shown on hover.

Hide labels

Don't show text labels for graph nodes. A hover tooltip will be used instead.

> Hide for specific node types

Show sub-folders as nodes

Include sub-folders inside your workfolder as nodes in the graph.

Hide unconnected nodes

Remove nodes without any connections from the graph.

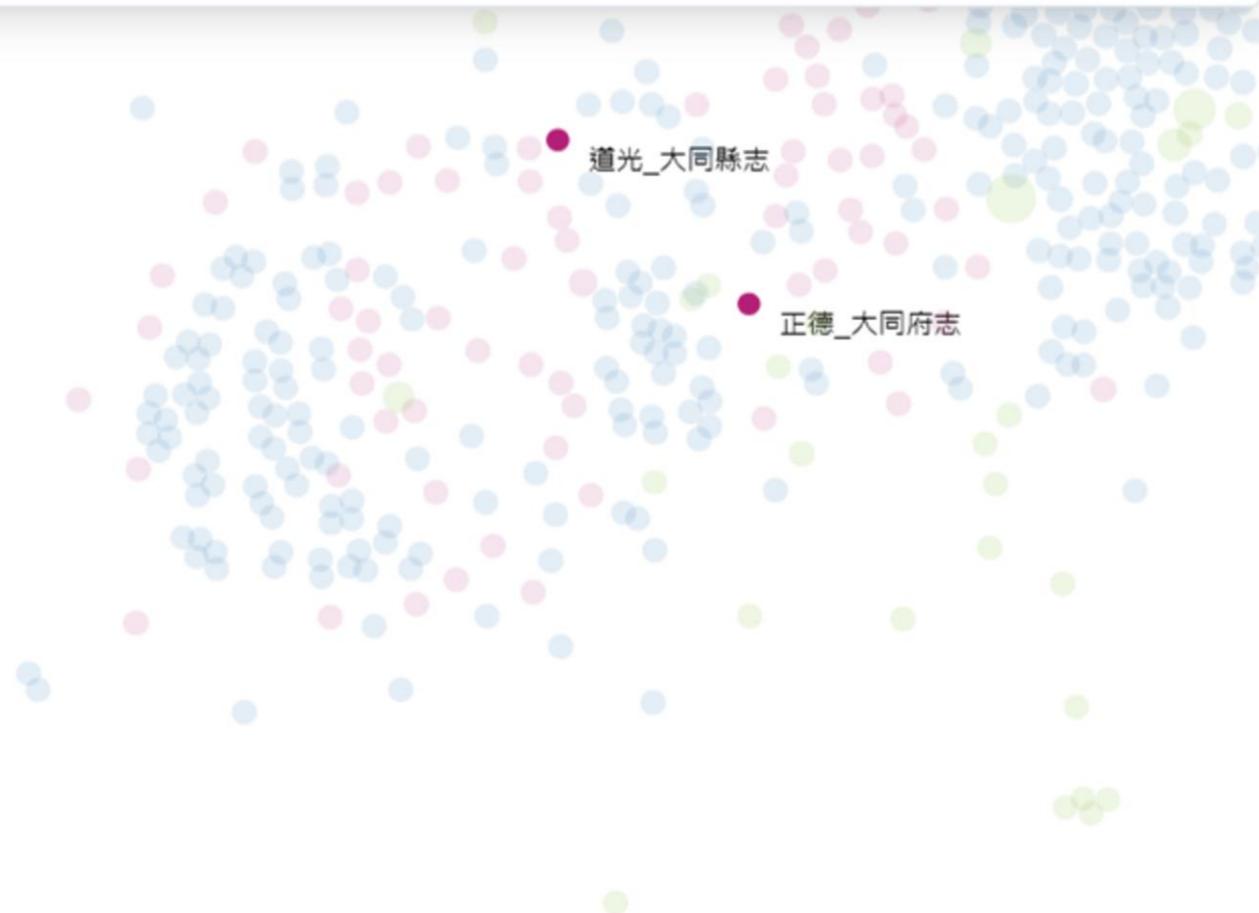
Searching by Metadata

Graph Search

Find

where is

[+ Add Condition](#) [Clear All](#) [Export Search Result](#)



Graph Type

Select how you want to visualize your data.

- Hierarchy & Annotations**
Visualize the data model hierarchy, folder structure and entity annotations.
- Relationships**
Visualize the Relationships between annotations. Data model hierarchy and entity annotations are shown on hover.

Hide labels

Don't show text labels for graph nodes. A hover tooltip will be used instead.

> Hide for specific node types

Show sub-folders as nodes

Include sub-folders inside your workfolder as nodes in the graph.

Hide unconnected nodes

Remove nodes without any connections from the graph.

Adding and Managing Conditions

The screenshot shows the IMMARKUS Knowledge Graph search interface. On the left is a navigation sidebar with the following items: **IMMARKUS**, Images, Data Model, **Knowledge Graph** (highlighted), Export, X-MARKUS, About, and Help. The main search area is titled "Graph Search" and contains a search bar with "images" selected. Below the search bar are two conditions:

- Condition 1: "with entity" (dropdown) "bridge" (dropdown) with a trash icon and a "+ Sub-Condition" button.
- Condition 2: "where" (dropdown) "relation to wall" (dropdown) "is" (dropdown) "extramural" (dropdown) with a trash icon.

Below these conditions are two more conditions:

- Condition 3: "and" (dropdown) "with entity" (dropdown) "water" (dropdown) with a trash icon and a "+ Sub-Condition" button.
- Condition 4: "where" (dropdown) "type" (dropdown) "is" (dropdown) "river" (dropdown) with a trash icon.

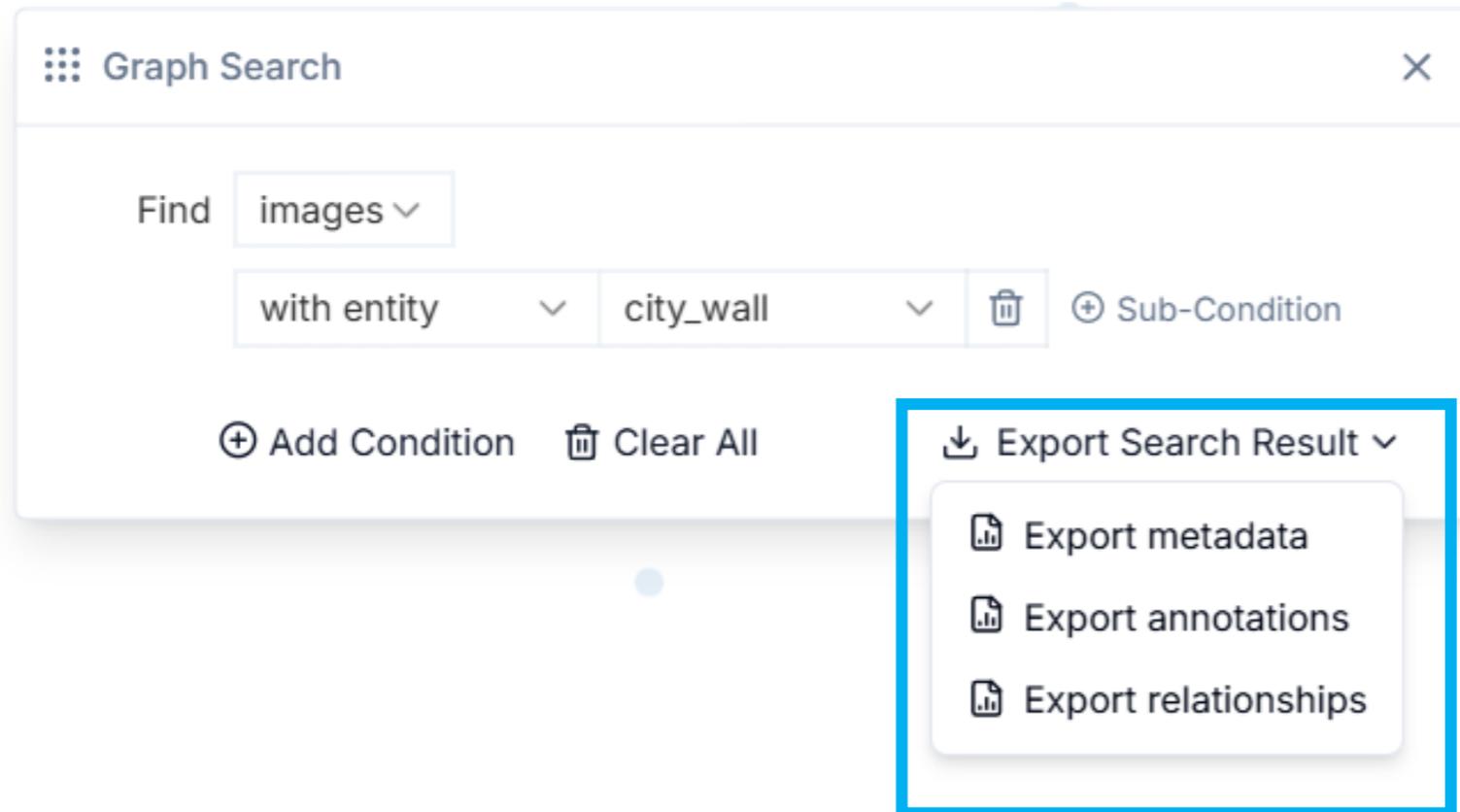
At the bottom of the search area are three buttons: "+ Add Condition", "Clear All", and "Export Search Res".

Three callout boxes provide instructions:

- A yellow box with an arrow pointing to the "+ Sub-Condition" button of the first condition: "Click + Sub-Condition to filter on properties of an entity class".
- A grey box with an arrow pointing to the trash icon of the second condition: "Click Dustbin icon to delete (sub)conditions".
- A grey box with an arrow pointing to the "+ Add Condition" button: "Click + Add Condition to add and/or condition to your search".

At the bottom right of the page, there is a decorative graphic of a cluster of blue and green dots.

Exporting Graph Search Results



The screenshot shows a 'Graph Search' window with a search query 'images' and a condition 'with entity city_wall'. Below the search bar are buttons for 'Add Condition' and 'Clear All'. A blue box highlights the 'Export Search Result' dropdown menu, which contains three options: 'Export metadata', 'Export annotations', and 'Export relationships'.

Graph Search

Find images

with entity city_wall

Sub-Condition

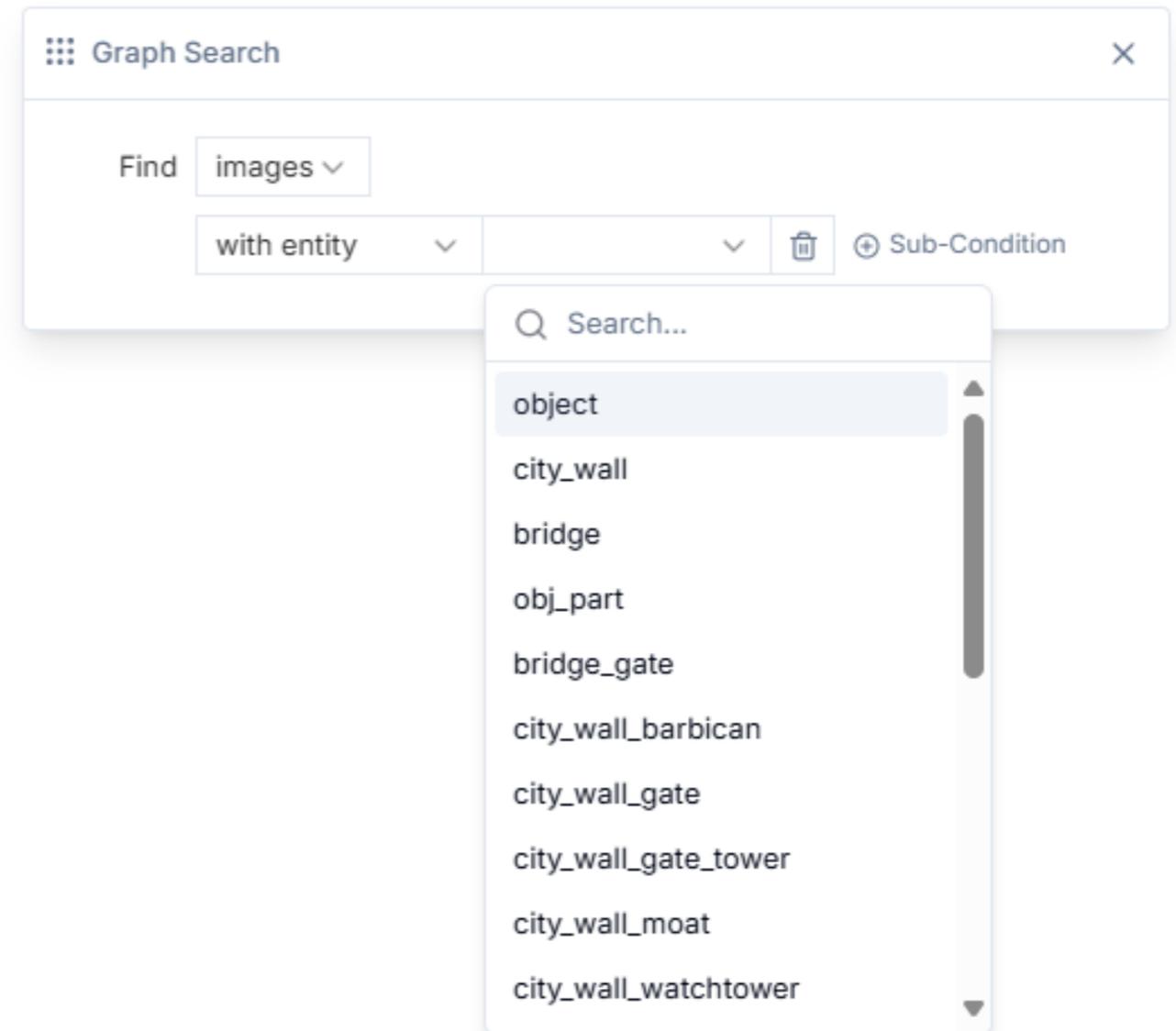
Add Condition Clear All

Export Search Result

- Export metadata
- Export annotations
- Export relationships

Practice 6. Searching for Images by Entity Tags

1. Click the **Magnifier Icon** 
2. Select **Find images** → **with entity** → **select one [entity]** from the dropdown list
3. The image node that meets the condition will be highlighted in the graph
4. Explore adding a **Sub-Condition** to include more search criteria



5. Exporting Annotations and Models

IMMARKUS

- Images
- Data Model
- Knowledge Graph
- Export**
- X-MARKUS
- About
- Help

[→] Exit

Export

Export your data in different export formats.

- Annotations**
- Relationships
- Data Model
- Metadata

Annotation Data

All annotations, on all images in your current work folder, as a flat list in [W3C Web Annotation JSON-LD](#) format.

 **JSON-LD**

Annotations and Images

All annotations, on all images in your current work folder, as an Excel file. Each top-level Entity Class will appear on a separate worksheet.

Image snippets are included as a spreadsheet column. Choose your preferred format:

- **Bounding box snippets:** rectangular images showing the full area around each annotation.
- **Exact shape snippets:** images clipped precisely to the annotated shape (applies to polygons and ellipses).

 Export bounding box snippets 

 **XLSX**

Exporting Annotations for Further Computation

IMMARKUS

- Images
- Data Model
- Knowledge Graph
- Export**
- X-MARKUS
- About
- Help

Export

Export your data in different export formats.

- Annotations**
- Relationships
- Data Model
- Metadata

Annotation Data

All annotations, on all images in your current work folder, as a flat list in [W3C Web Annotation JSON-LD](#) format.

 **JSON-LD**

Annotations and Images

All annotations, on all images in your current work folder, as an Excel file. Each top-level Entity Class will appear on a separate worksheet.

Image snippets are included as a spreadsheet column. Choose your preferred format:

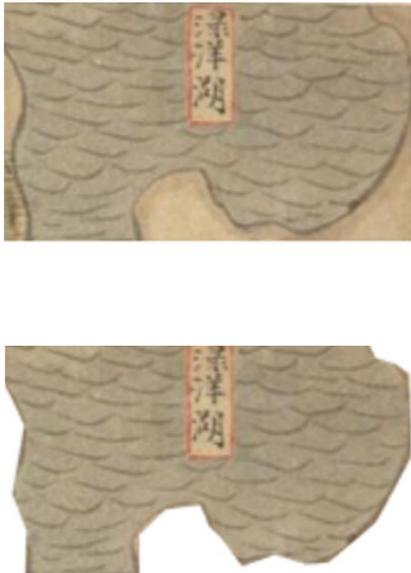
- Bounding box snippets:** rectangular images showing the full area around each annotation.
- Exact shape snippets:** images clipped precisely to the annotated shape (applies to polygons and ellipses).

Export bounding box snippets

Export bounding box snippets

Export exact shape snippets

 **XLSX**

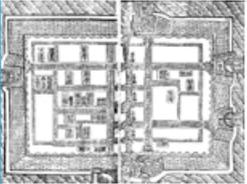


Two images of a textured surface with a red rectangular annotation box. The top image shows the full rectangular area around the annotation, while the bottom image shows the annotation shape clipped to the surface texture. Blue arrows point from the dropdown menu options to these images.

Exporting Annotations for Further Computation

Snippet column

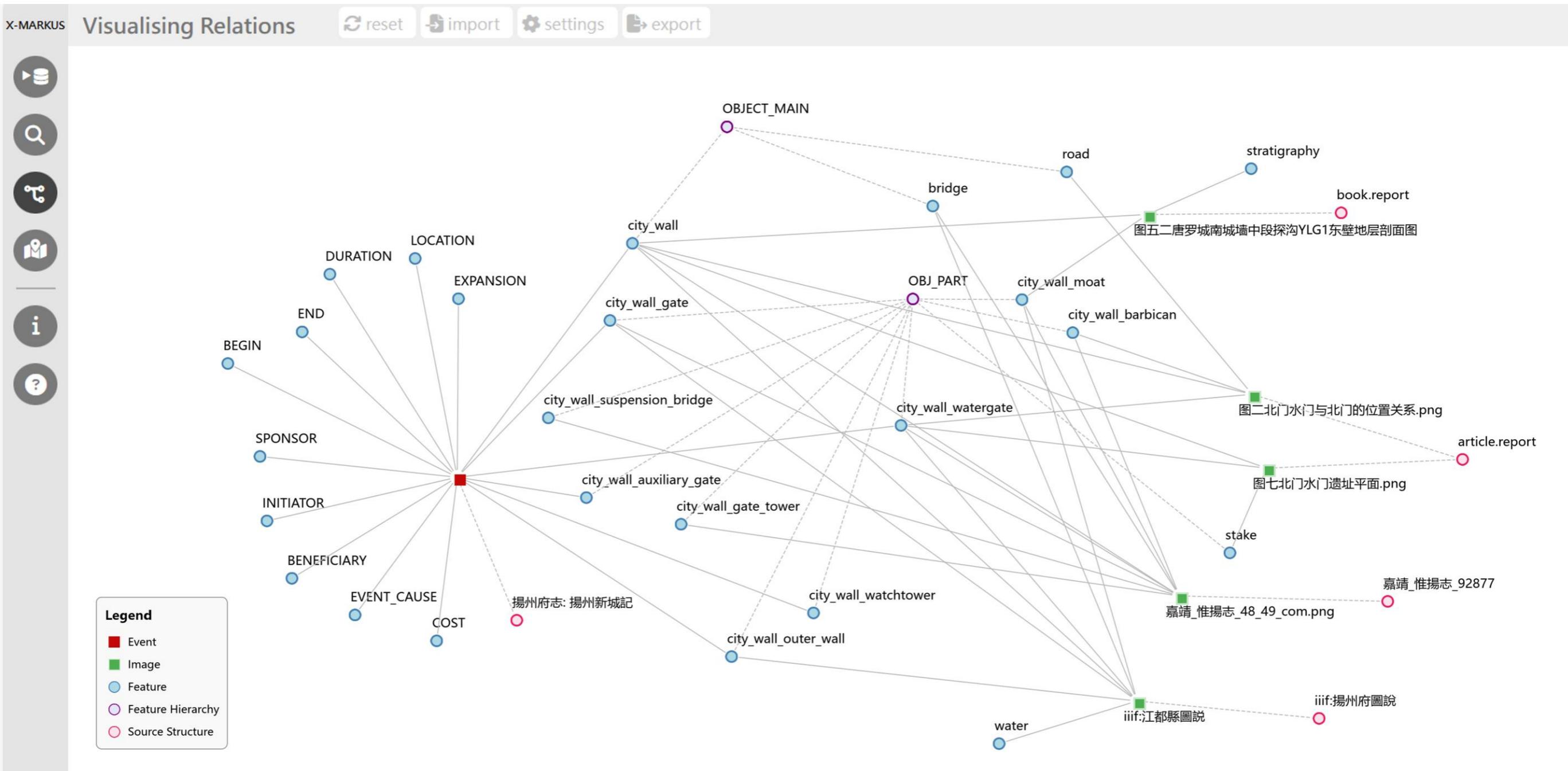
Annotated Properties

	A	B	C	D	E	F	G	H	I
1	Snippet	Image Filename	Folder Name	Annotation ID	Created	Entity Class	id	nam	descriptor
2		嘉靖_惟揚志_48_49_c0616_yangzhou_map_IMMARMKUS_revised/嘉靖_惟揚		5b9896cd-9b51-4b04-a3c5-5103f8746a8	2025-05-23T10:42:07.021	city_wall	yangzhou_cheng		揚州城
3		嘉靖_惟揚志_48_49_c0616_yangzhou_map_IMMARMKUS_revised/嘉靖_惟揚		c2f5e32e-d7ec-40a0-b962-b64bc0cc00c6	2025-05-23T10:27:14.434	bridge	yangzhou_kaiming_qiao		開明橋
4		嘉靖_惟揚志_48_49_c0616_yangzhou_map_IMMARMKUS_revised/嘉靖_惟揚		7173dbd1-110d-4ae6-8d76-677ce680f0c	2025-05-23T10:27:24.170	bridge	yangzhou_wenjin_qiao		文津橋
5		嘉靖_惟揚志_48_49_c0616_yangzhou_map_IMMARMKUS_revised/嘉靖_惟揚		fd6f5684-0285-4f63-a6a4-50e0b15f8d69	2025-05-23T10:27:38.385	bridge	yangzhou_tongsi_qiao		通泗橋
6		嘉靖_惟揚志_48_49_c0616_yangzhou_map_IMMARMKUS_revised/嘉靖_惟揚		f40efc83-17a7-495c-92ae-682ebc173153	2025-05-23T10:27:46.122	bridge	yangzhou_taiping_qiao		太平橋

object | obj_part | water

Entity Classes

Knowledge Graph Showing Entity Connections across Text and Image Corpora



Practice 7. Exporting Your Annotations as an Excel File

1. Click **Export** on the left-hand menu bar
2. Select your preferred snippet type, then click **XLSX**
3. Open the downloaded Excel file to view your annotations

Exporting Data Models for Reuse

Export

Export your data in different export formats.

- Annotations
- Relationships
- Data Model
- Metadata

Entity Classes
Your Entity Class model, in proprietary IMMARKUS JSON Format.

JSON

Relationship Types
Your Relationship Type model, in proprietary IMMARKUS JSON Format.

JSON

Image Metadata Schemas
Your Image Metadata schemas, in proprietary IMMARKUS JSON Format.

JSON

Folder Metadata Schemas
Your Folder Metadata schemas, in proprietary IMMARKUS JSON Format.

JSON

Full IMMARKUS Data Model
All of the above - Entity Classes, Relationship Types, Image and Folder metadata schemas. This export is the same file you will find in your work folder as `_immarkus.model.json`. It is re-published here for convenience.

JSON



```
1 [
2 {
3   "color": "#94375c",
4   "id": "object",
5   "properties": [
6     {
7       "name": "id",
8       "type": "text",
9       "description": "use pinyin"
10    },
11    {
12      "name": "name",
13      "type": "text",
14      "description": "use Chinese characters"
15    },
16    {
17      "name": "descriptor",
18      "type": "text",
19      "description": "Transcribe Chinese text annotations related to t
20    },
21    {
22      "name": "TGAZ",
23      "type": "external_authority",
24      "authorities": [
25        "TGAZ"
26      ],
27      "description": "Use the id at the relevant time."
28    },
29    {
30      "name": "DILA_PL",
31      "type": "external_authority",
32      "authorities": [
33        "DILA (Place)"
34      ],
35      "description": "Use id if TGAZ id is not available. Use the one
36    },
37    {
38      "name": "texture",
39      "type": "enum",
40      "multiple": true,
41      "values": [
42        "angle_bracket",
43        "bond_pattern",
44        "flagstone_layout",
45        "solid_black",
46        "striped",
47        "unadorned"
```

Exporting Data Models for Reuse

Data Model

Entity Classes Relationships Image Metadata Folder Metadata

Use Entity Classes to annotate specific concepts or things with your annotations, and record details like the the material of an item, or the number of legs on an animal.

Entity Class	Display Name	Description	Properties
> ● figure	figure		Aa descriptor ...
> ● geo_feature	geo_feature		Aa name Aa descriptor ...
> ● obj_part	obj_part		Aa name Aa descriptor i≡ color +2 ...
> ● object	object		Aa id Aa name Aa location +4 ...
> ● text	text		Aa descriptor # number ↶ relation_test ...

Create New Entity Class

Import Model

Import Entity Classes

Replace Current Model

You can either delete and replace your existing model, or add the imported classes to your current model.



How to Handle Duplicate Classes

Select how the import should merge classes that already exist in your model.

- Keep Existing
If the import contains classes that already exist in your model, keep the existing ones and discard the imported classes.
- Keep Imported
If the import contains classes that already exist in your model, discard the existing ones and keep the imported classes.

Upload Datamodel File

Use files downloaded from Export / Data Model.

With thanks to



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- Hilde De Weerdt, Lee Sunkyu, Iva Stojević, Xi Wangzhi, Dawn Zhuang, Meret Meister, Wang Ran, Pascal van der Bij (KU Leuven)
- Brent/Hou leong Ho (Staatsbibliothek zu Berlin)
- Rainer Simon
- Bol, Peter K., Michael Fuller, et al. China Biographical Database Project (CBDB) (2004–). <http://isites.harvard.edu/icb/icb.do?keyword=k16229&pageid=icb.page12970>
- ———, Lex Berman, et al. China Historical GIS (2001–). <http://www.fas.harvard.edu/~chgis/>
- ———, Center for Historical Geography at Fudan University, ACASIAN at Griffith University, et al. Hartwell China History Project GIS (1992–2001). <http://www.fas.harvard.edu/~chgis/>
- Tu Hsieh-Chang, Hsiang Jieh, Lin Nungyao et al. National Taiwan University.

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