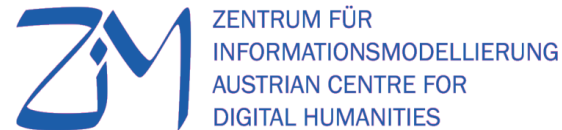


Research possibilities created by making manuscript images available online

Georg Vogeler
@GVogeler



<http://www.i-d-e.de>



<http://gams.uni-graz.at>

Why are we digitizing at all?

- To make cultural objects **available**, to **contribute** cultural heritage to the **digital culture**
- To make **information retrieval** easier (search for metadata, full texts)
- To **reveal unknown** things

Digital Culture: Twitter

#manuscript

Top Neueste Personen Fotos Videos Nachrichten Live-Videos

Suchfilter · Anzeigen

Ähnliche Suchanfragen
#amwriting

Personen [Alle anzeigen](#)



Startseite Mitteilungen Nachrichten

glagolitic manuscripts

Twitter

glagolitic manuscripts

Top **Neueste** Personen Fotos Videos Nachrichten Live-Videos

Suchfilter · Anzeigen

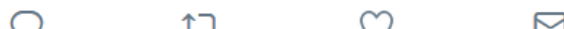
Wem folgen? · Aktualisieren · Alle anzeigen



John McChesney-Young @jmccyoung · 8. März 2016

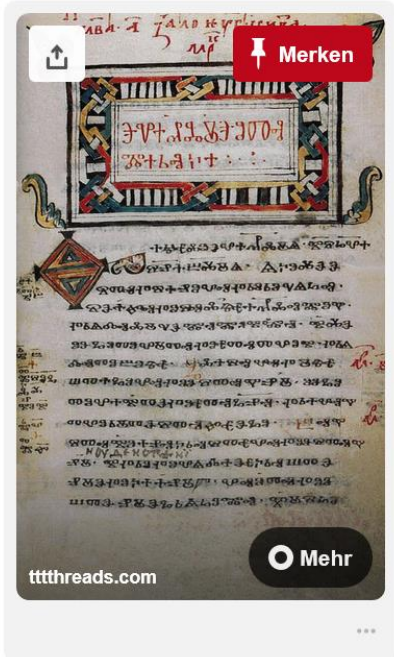
My life is much better for knowing people who write, "A reference to **Glagolitic manuscripts** always brightens my day." cc @quinnanya

Original (Englisch) übersetzen



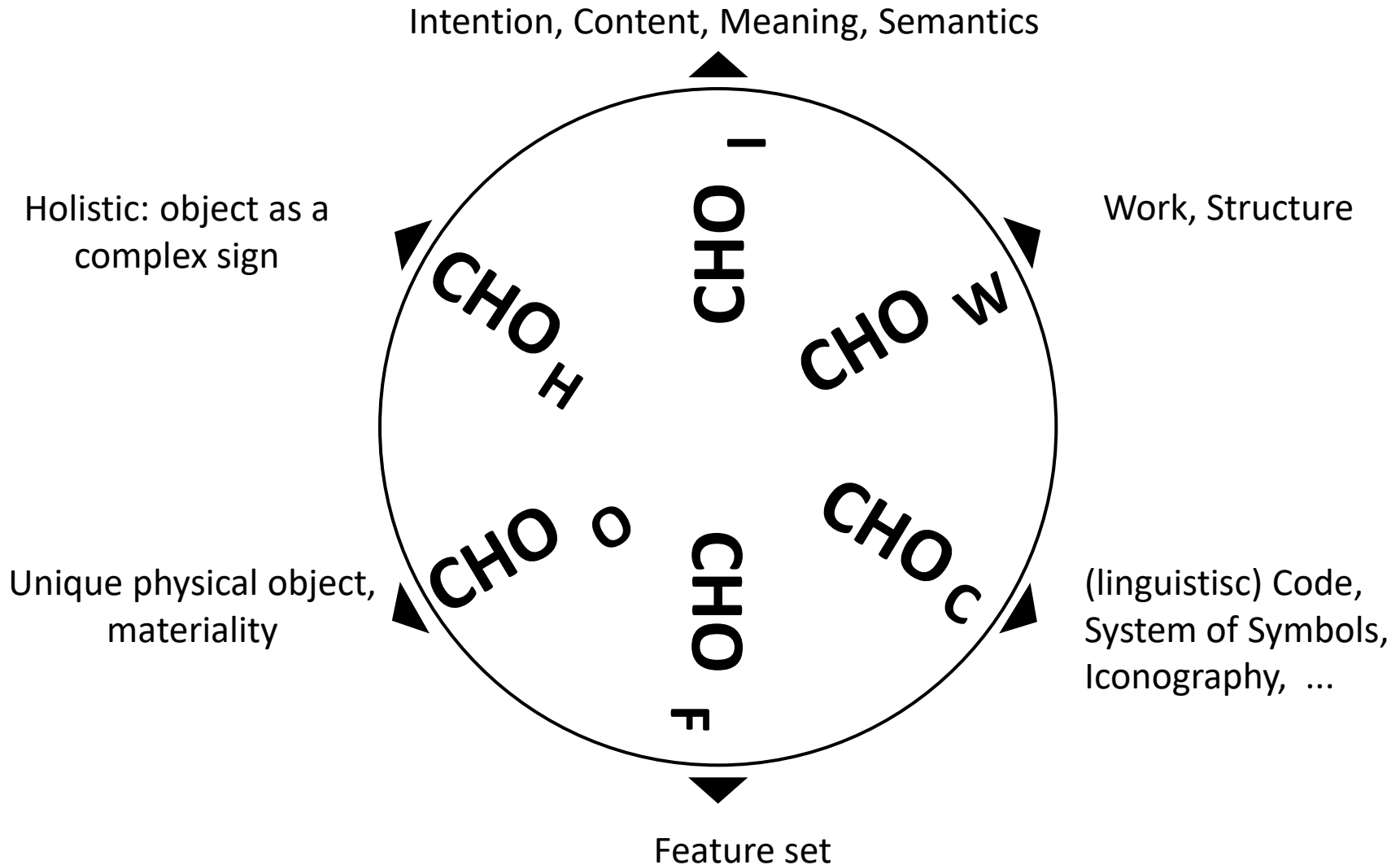
Digital Culture: Pinterest

А а А а а а а а а а
Б б Б б Б б Б б
В в В в В в В в
Г г Г г Г г Г г
Д д Д д Д д Д д
Е е Е е Е е Е е
Ж ж Ж ж Ж ж Ж ж
З з З з З з З з
И и И и И и И и
К к К к К к К к
Л л Л л Л л Л л
М м М м М м М м
Н н Н н Н н Н н
О о О о О о О о
П п П п П п П п
Р р Р р Р р Р р
С с С с С с С с
Т т Т т Т т Т т
У у У у У у У у



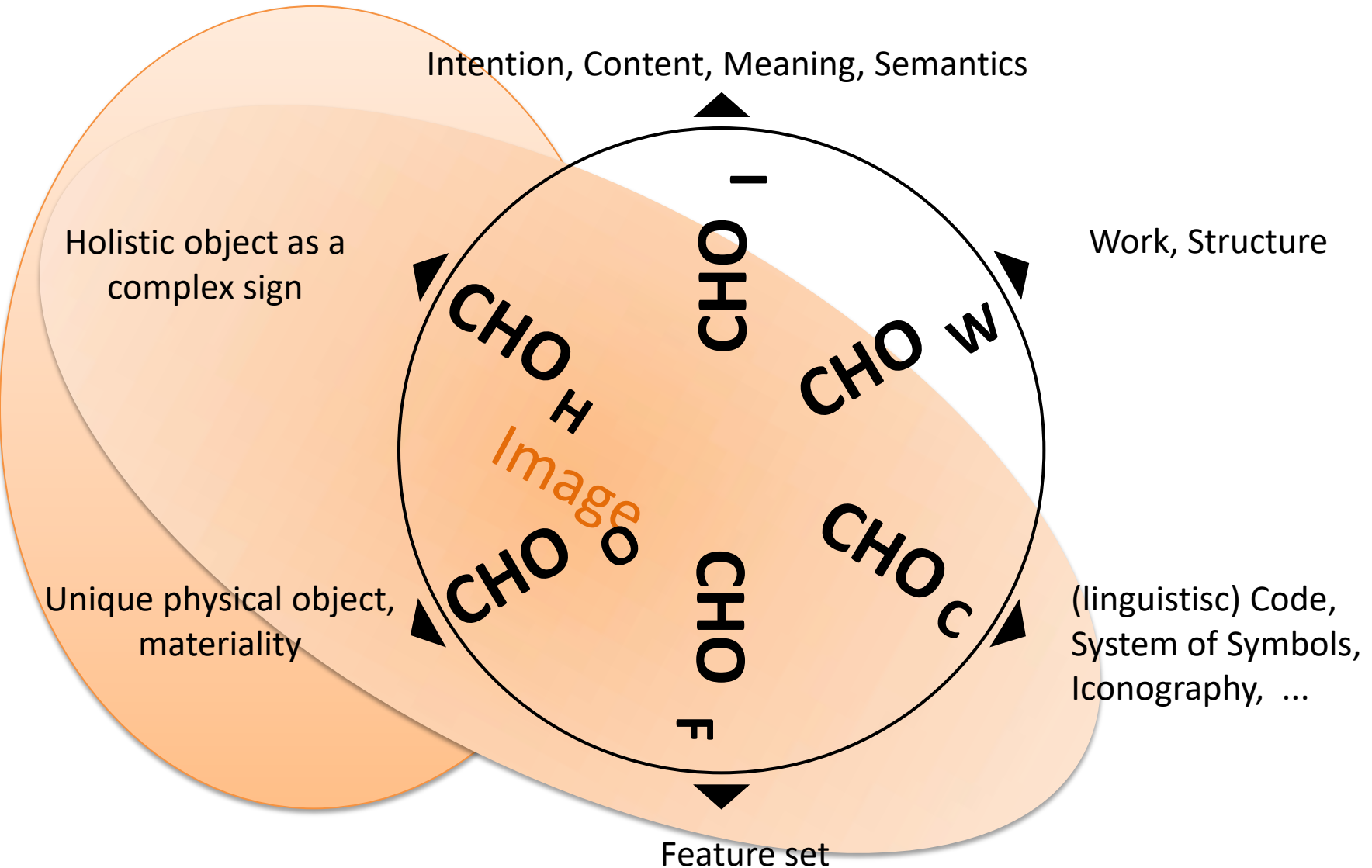
II. Dodafak.

A Pluralistic View on CHO



(based on the „Text Wheel“ by Patrick Sahle: Digitale Editionsformen, III, 2013)

Images in a Pluralistic View on CHO?



Search: Himanis

HIMANIS 

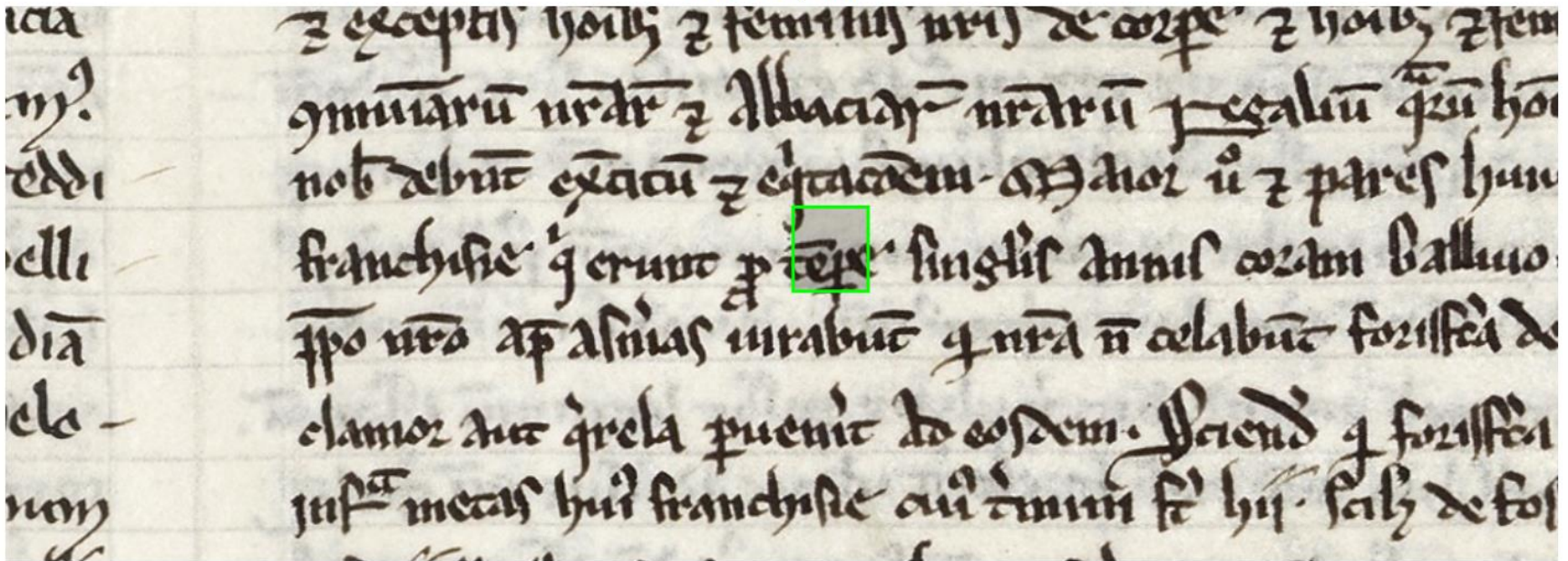
tempore Search Confidence: 50 Max. results:

[Need help?](#)

You are here: [home](#) » [chancery](#) » [JJ026](#) » [page 228](#)

2 matches found for "tempore" with an average confidence of 100 !

[← Previous](#) | [Next →](#)



<http://www.himanis.org/#search>,

<http://prhlt-kws.prhlt.upv.es/himanis/index.php/ui/show/chancery/51/228?q=tempore>



<http://www.monasterium.net>

MONASTERIUM.NET

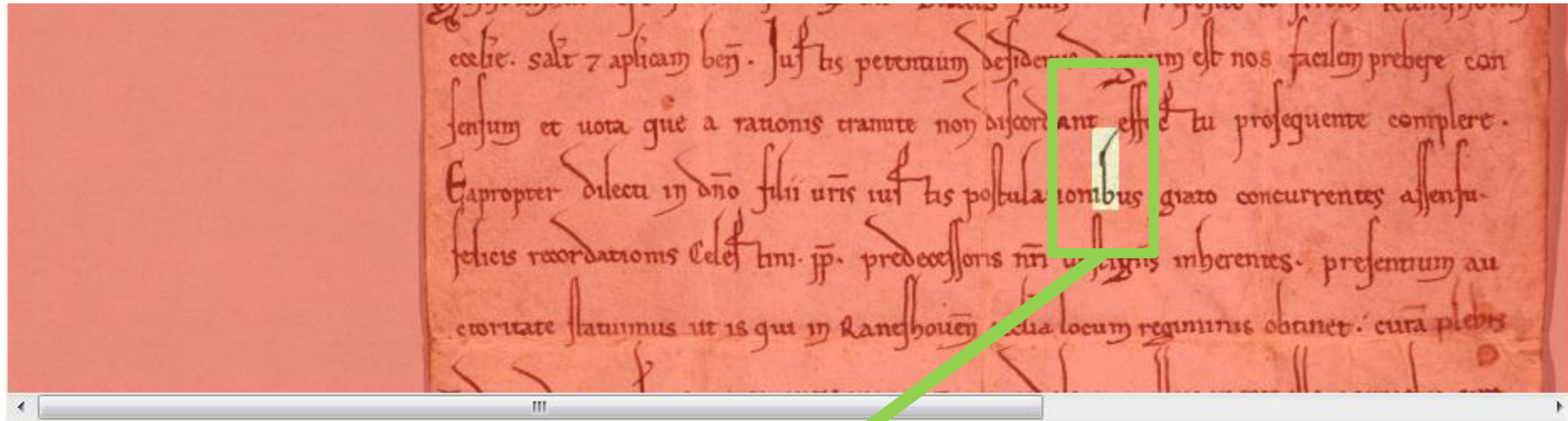
monasterium.net: making available

- Online since 2002
- Currently: 169 Archives; 1951 Fonds;
183 collections
- 624.919 charters, 842.945 images
- Images!!!
 - Even images without description

Images in MOM: Reveal The Unknown

- Palaeography
- Notarial Signs
- Layout
- Illuminations
- ...

Extract Image Part



Viewmode



Create Annotation

Extract Image Section

Hilfe

Image

Image name

Anmerkung

b



Save options

Neue Sammlung

Expand existing collection

Type: Innozenz III Name: 1202 V 27

a

Add

MeinArchiv

[Bookmarken](#)

Charter in use by

[Download XML](#)

Palaeography

- DigiPal: Database of palaeographical descriptions:
 - Characters used (verbal description, image snippets)
 - Hands
 - 210 charters, 1465 manuscripts (samples)

The screenshot displays the DigiPal website interface. At the top, the logo 'DigiPal' is followed by the text 'Digital Resource and Database of Palaeography, Manuscript Studies and Diplomatic'. A navigation bar includes links for 'Browse Images', 'Search', 'My Collection (0)', 'News & Blog', 'About', and 'Help'. Below this is a search bar with the text 'Database' and 'Enter search terms'. The main content area shows the title 'Manuscript Image: Canterbury Chart. Ant. C.3: face' and a set of tabs for 'Manuscript Image', 'Annotations (114)', 'Hands (1)', 'Other Images (1)', 'Document', and 'Image Copyright'. Under the 'Annotations' tab, the 'Main Hand' section is visible, followed by an 'Allographs List' which includes a grid of character labels such as 'a, Insular', 'æ, Insular', 'b', 'c', 'd, Insular', 'e', 'E, enlarged minuscule', 'f, Insular', 'g, Insular', 'h, Insular', 'i', 'k', 'l', 'm', 'n', 'o', 'p', 'r, Insular', 's, Long', 's, Round', 't', 'thorn', 'eth', 'u', 'wynn', 'x', 'y, Straight', 'z', 'punctus', 'thæt', and 'abbrev. stroke'. Below the list, there are two sections: 'a, Insular' and 'æ, Insular', each containing five small image thumbnails of the respective characters in various styles.

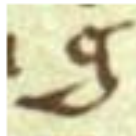
<http://digipal.eu>

Compare Images

Buttons below the viewports to load the images into the editor:

Innozenz III ▾ 1202 V 27 ▾

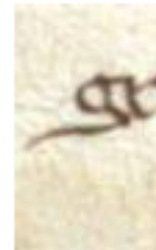
Imagename: g





Anmerkung: _____


Innozenz III ▾ 1200 IV 17 ▾

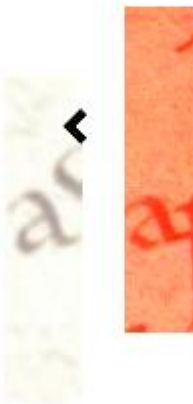
Imagename: g







Anmerkung: _____

Choose image:  Transparency: 

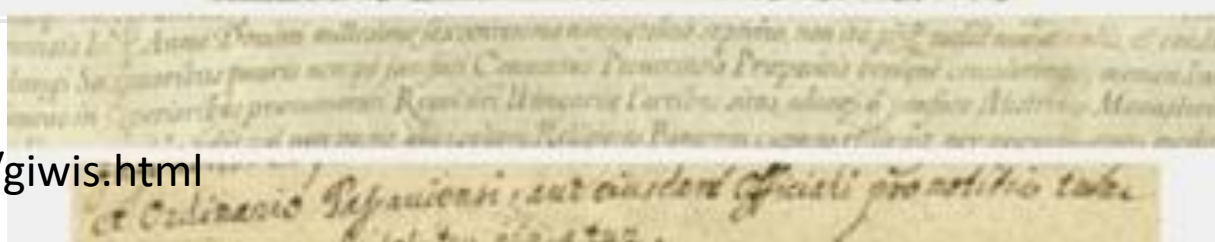
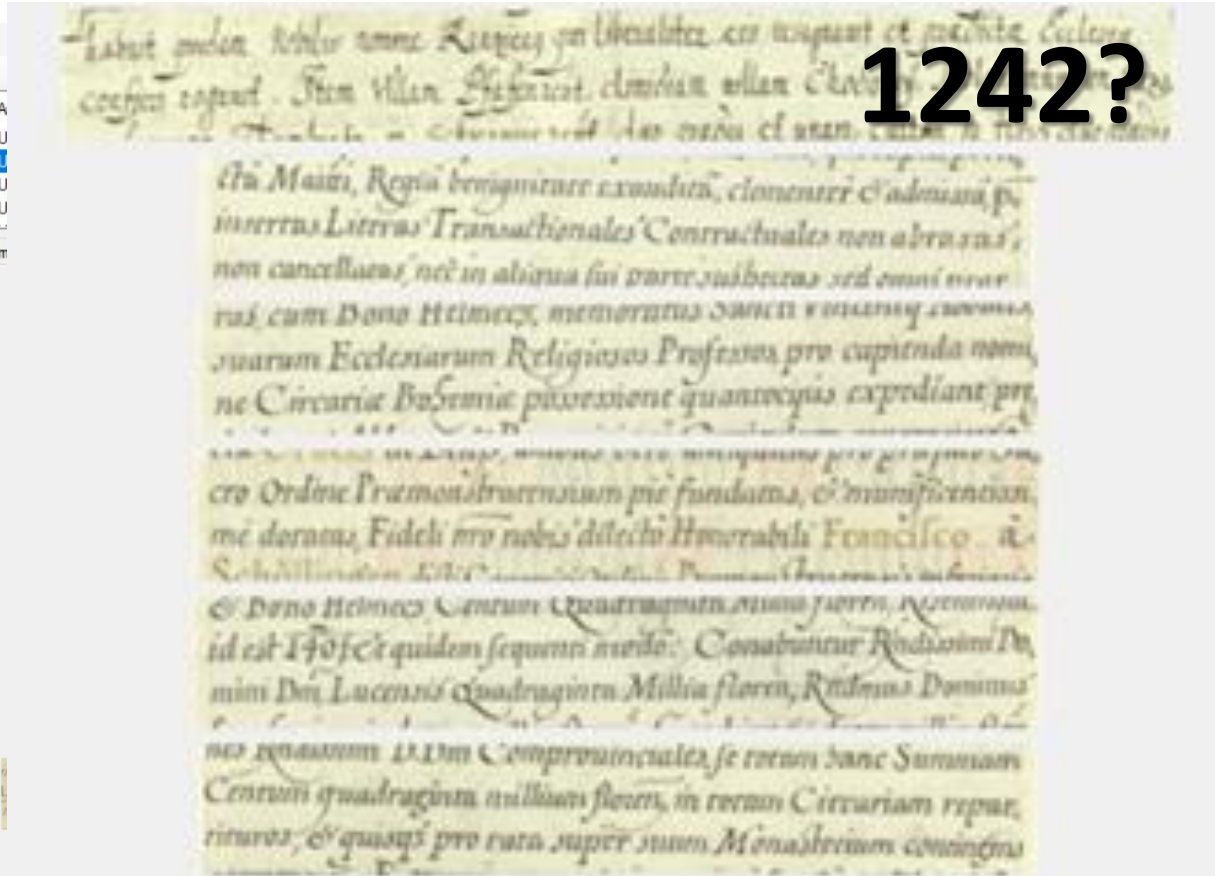
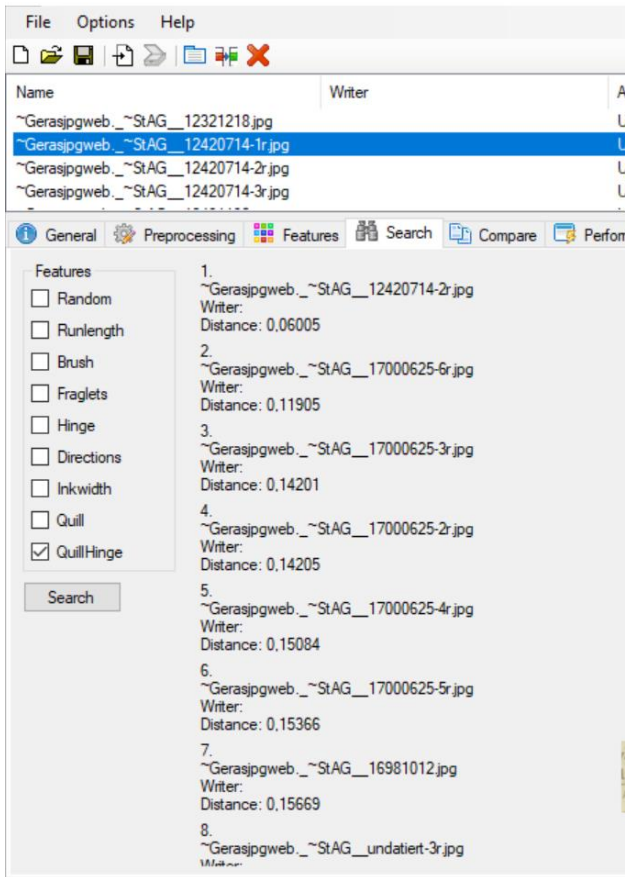




move images, e.g. by overlaying them

Palaeography: GIWIS



Signum Recognitionis

The screenshot shows a web browser window displaying the Monasterium.net website. The URL in the address bar is <http://monasterium.net/mom/image-collections#Otto I. Rekognitionszeichen2100132>. The page is titled "Image Collections" and shows a collection of three signum recognitionis (seals) for Otto I. The user is logged in as "georg vogeler".

The page layout includes a navigation menu with "Home", "Fonds", "Collections", "Search", "Help", and "MyArchive". There is a "Logout" link and a language selector set to "english".

The main content area displays the following information:

- Type: Rekognitionszeichen
- Name: Otto I.
- View images button

The collection contains three items:

Imagename	Charter	Note
Otto I. 965-01-23	KAE_Urkunde_Nr_11	Created by: Georg Vogeler
947-10-27	KAE_Urkunde_Nr_1	Created by: Georg Vogeler
952-08-09	KAE_Urkunde_Nr_5	Created by: Georg Vogeler

The signum recognitionis are depicted as stylized, geometric diagrams with various symbols and lines, often enclosed in a rectangular frame with a decorative top element.

<http://monasterium.net/mom/image-collections#Otto%20I.%20Rekognitionszeichen2100132>

Notarial signs

- Magdalena Weileder (Munich)
 - identified in 2014 974 notarial documents from Southern German archives in monasterium.net

Magdalena Weileder: Spätmittelalterliche Notarsurkunden aus virtuellen Archiven, in: Lesesaal Internet. Erfahrungen, Ergebnisse und Wünsche auf dem Weg zu einer digitalen Forschungslandschaft archivischer Quellenbestände, hg. v. Julian Holzapfl, München 2014 (Sonderveröffentlichung der Staatlichen Archive Bayerns 10), S. 50-57.

- Codice Pelavicino, ed. Enrica Salvatori (Pisa), 2014-
<http://pelavicino.labcd.unipi.it/>
 - signa tabellionatus

[Home](#) > [Notai](#)

NOTAI

<http://pelavicino.labcd.unipi.it/notai/>

Adiutus / Aiutus

Informazioni generali:

Nome: Adiutus / Aiutus

Qualifica: sacri palatii notarius

Note: Attestato dal 1230 al 1260.

Firme nel Codice:



(Doc. N°: 155 - CXXXVIII)



(Doc. N°: 160 - CXLII)



(Doc. N°: 162 - CXLIV)

Notarial Signs

- Magdalena Weileder (Munich)
 - identified 974 notarial documents from Southern German archives in monasterium.net
 - Team of Vincent Chistlein (Erlangen): annotate notarial signs



ABP_14341123_P
fA-Winzer-U-000
2-0_r.jpg



ABP_14510102_P
fA-Burghausen-U
-0071-0_r.jpg



ABP_14601104_P
fA-Burghausen-U
-0084-0_r.jpg



ABP_14610108_O
A-U-00054-0_r.jp
g



ABP_14611121_P
fA-Burghausen-U
-0085-0_r.jpg



ABP_14691117_P
fA-Burghausen-U
-0095-0_r.jpg



ABP_14710406_P
fA-Burghausen-U
-0098-0_r.jpg



ABSP_Domstift_1
4010720_37_r.jpg



AES_14350224_R
eiheD-150_r.jpg



AES_14430116_R
eiheD-183_r.jpg



AES_14460408_R
eiheA-383_r.jpg



AES_14491003_R
eiheD-223_r.jpg



AES_14590207_R
eiheD-280_r.jpg



AES_14590208_R
eiheD-281_r.jpg



AES_14590312_R
eiheD-286_r.jpg



AES_14590507_R
eiheD-290_r.jpg



AES_14590921_R
eiheD-294_r.jpg



AES_14591112_R
eiheD-295_r.jpg



AES_14600416_R
eiheD-300_r.jpg



AES_14600416_R
eiheD-301_r.jpg

Find rare objects

Like:

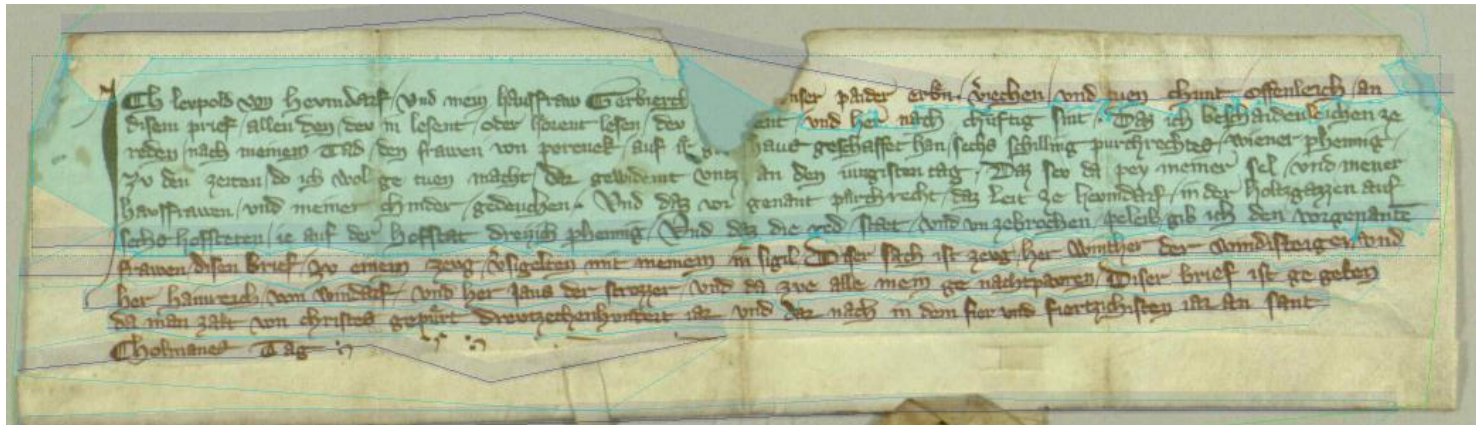
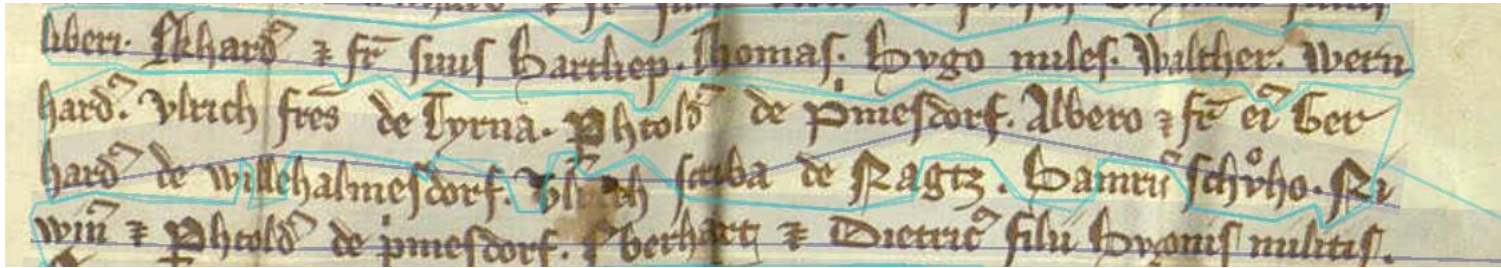
- Notarial documents in German archives in late middle ages
- Monograms of high medieval emperors in the whole set of charters

... automatically?

Layout: Transkribus

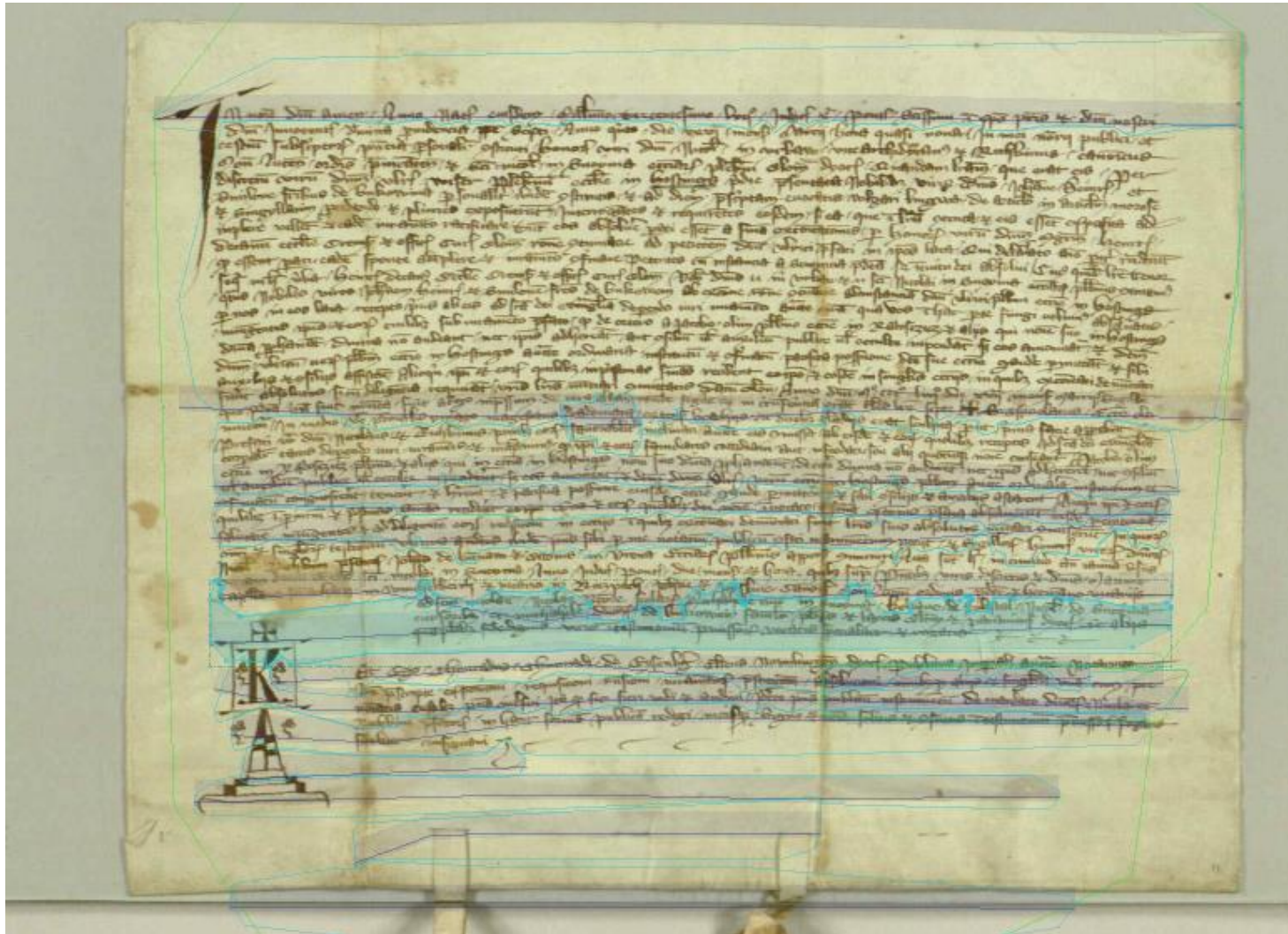


Layout: Transkribus

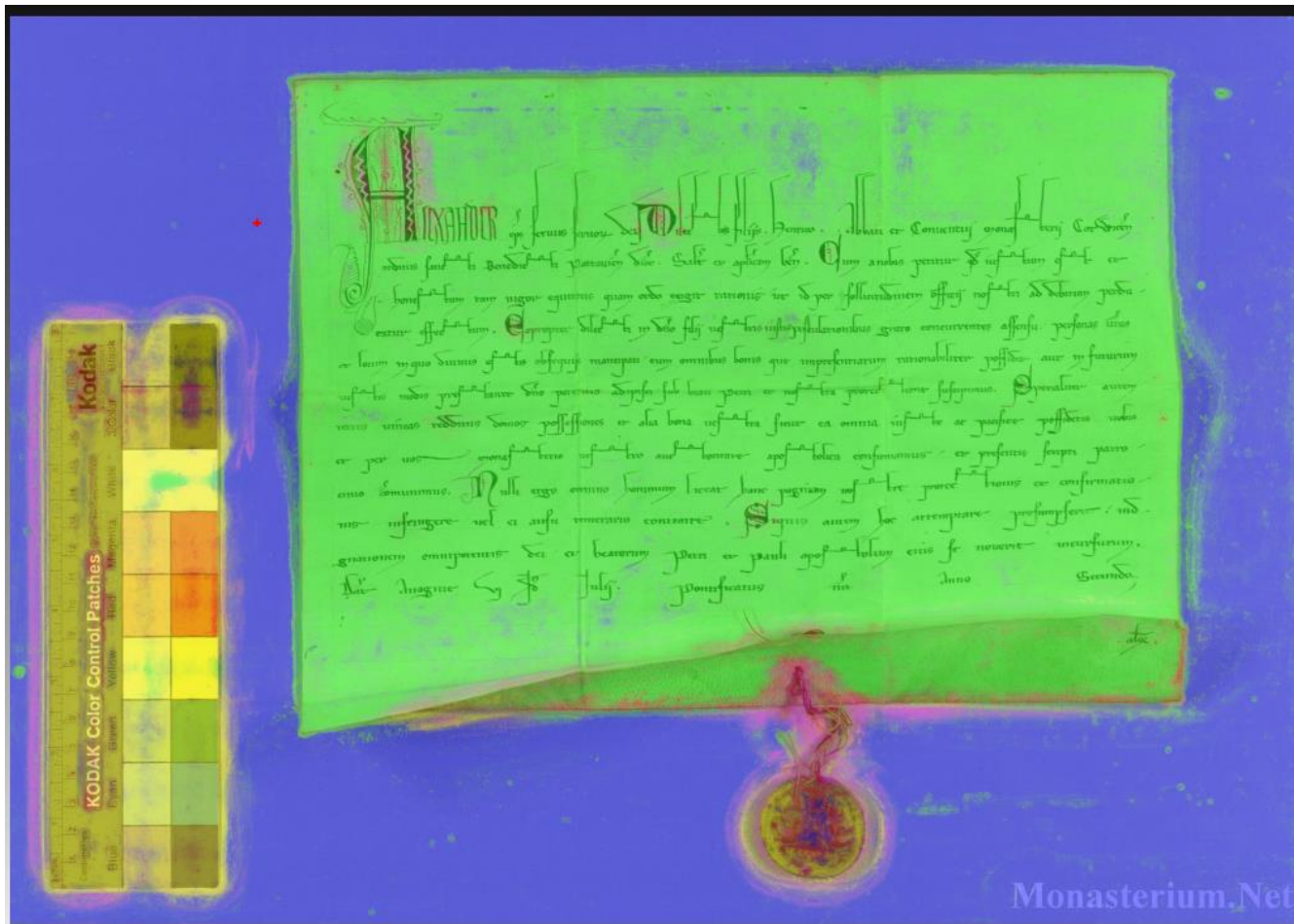


Still one of the best line detection algorithms available!

Layout detection: Transkribus



Layout: ImageJ/Ilastik



Layout: ImageJ/Ilastik

Project Settings View Help

Input Data
Feature Selection
Training
Thresholding
Method: Simple
Input: 0
Smooth: 4,0 4,0
Threshold: 0,75
Size FilterMin: 50 Max: 1000
Apply
If you already have
Object Feature Selection
Object Classification
Object Information Export
Batch Processing
Blockwise Object Classification
Current View: 114_K...MOM-Bilddate

Final output $\alpha=100.0\%$
Input Channel 0 $\alpha=50.0\%$
Input Channel 1 $\alpha=50.0\%$
Input Channel 2 $\alpha=50.0\%$

X 2 Y 482 Crosshairs

100%

Monasterium.Net

Active Requests: 0 Cached Data: 160.7 MB

Layout

The screenshot displays the Ilastik software interface. The title bar reads "ilastik - Z:/Documents/Uni/HistInf/Urkunden/Monasterium/Zadar171106-07/Experimente/illum.ilp - Pixel Classification + Object Classification". The menu bar includes "Project", "Settings", "View", and "Help".

The left sidebar contains several sections:

- Input Data**
- Feature Selection**
- Training**
- Thresholding**: Method: Simple; Input: 0; Smooth: 4,0; Threshold: 0,75.
- Size Filter**: Min: 50; Max: 1000000.
- Object Feature Selection**
- Object Classification**
- Object Information Export**
- Batch Processing**
- Blockwise Object Classification**

The main view area shows a manuscript page with a large circular seal in the center. The seal features a cross with four quadrants containing different symbols. Red markings and lines are visible on the page. A color calibration chart (KODAK Color Control Patches) is visible at the bottom of the main view. The status bar at the bottom shows "X 491 Y 188" and "Crosshairs" (unchecked).

The bottom right corner of the interface displays "Active Requests: 0" and "Cached Data: 1335.6 MB".

Illuminated Charters



- Martin Roland, Andreas Zajic, Gabriele Bartz, Markus Gneiß, Martina Bürgermeister, Georg Vogeler, FWF funded (P 26.706)
- Classification of decorations (Martin Roland 2014):
 - 1: Historiated, with colors
 - 2: unconventionally rich
 - 3: Graphical signs as means of authentication

Illuminated Charters



www.monasterium.net/mom/IlluminierteUrkunden/collection

Suchen



[Home](#) [Fonds](#) [Collections](#) [Search](#) [Help](#) [MyArchive](#)

[Register](#) [Login](#)

Choose language english

Collection: Illuminierte Urkunden

[Collections](#) > [Illuminierte Urkunden](#)

[Annotation overview](#) >>

Preface

[English version below](#)

Grouped by

[Urkunden dieser Sammlung aus Vorschaubilder anzeigen](#) / [Show the charters of this collection as thumbnails](#)

years:

Suche in der Sammlung / Search in the collection:

877 - 1195

Teilmenge "[Cimelia](#)"

1202 - 1272

Teilmenge "[Bischofsammelablässe](#)"

1276 - 1287

Teilmenge "[Frankreich](#)"

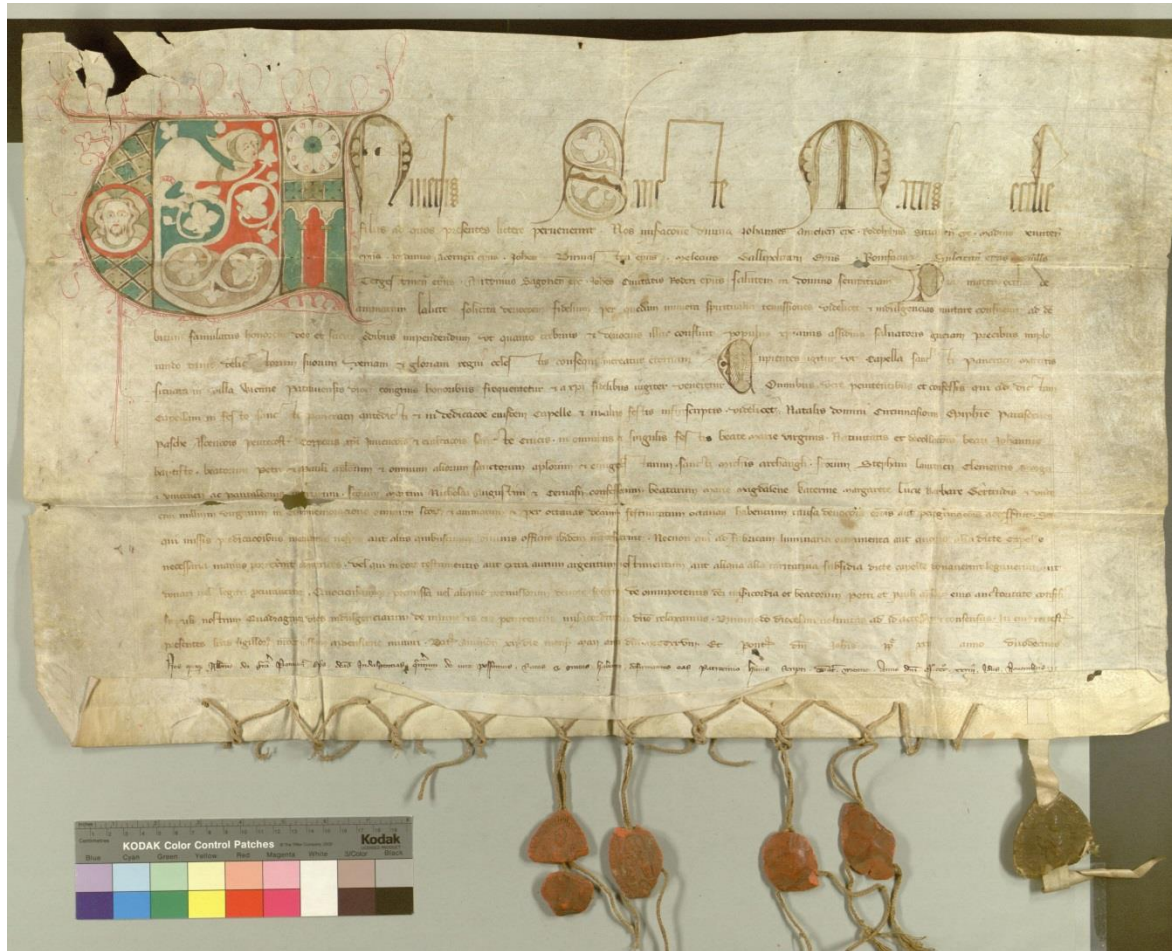
1287 - 1289

Teilmenge "[Lombardei \(auf Deutsch\)](#)"

1289 - 1295

Teilmenge "[Lombardia \(in italiano\)](#)"

Worshop in Avignon 1328-1348



Wien, Archiv des Schottenstifts Wien, sub dato (alt: Scr. 24 A. Nr. 1a)

http://monasterium.net/mom/IlluminierteUrkunden/1328-05-12_Wien/charter

Space for local illuminations



Darmstadt, Hessisches Staatsarchiv, Urkunden der ehemaligen Provinz Oberhessen (Best. A 3), Nr. 247/26.

http://monasterium.net/mom/IlluminierteUrkunden/1357-11-20_Darmstadt_1/charter

Finding Them with Metadata

- Archives aren't interested in visual appearance of documents:
- Use generic terms like „indulgence“, „coat of arms“
- **But:**
 - Ludwig IV, German Emperor
 - Charles V, French King
 - Spanish privilegios rodados
 - ...

Illuminated Charters: Confusion Matrix (Christlein 2018)

		<i>Automatic attribution</i>				
<i>Human attribution</i>		Niveau 1	Niveau 2	Niveau 3	Niveau 4	precision
	Niveau 1	336	87	4	25	74%
	Niveau 2	97	1459	90	288	75%
	Niveau 3	1	56	342	75	72%
	Niveau 4	32	897	113	6094	85%
	Niveau 1 historiated					
	Niveau 2 decorated					
	Niveau 3 Graphical authentication					
	Niveau 4 No graphical elements					

Illuminated Charters: Confusion Matrix (Christlein 2018)

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	Niveau 1 historiated					
	Niveau 2 decorated					
	Niveau 3 Graphical authentication					
	Niveau 4 No graphical elements					

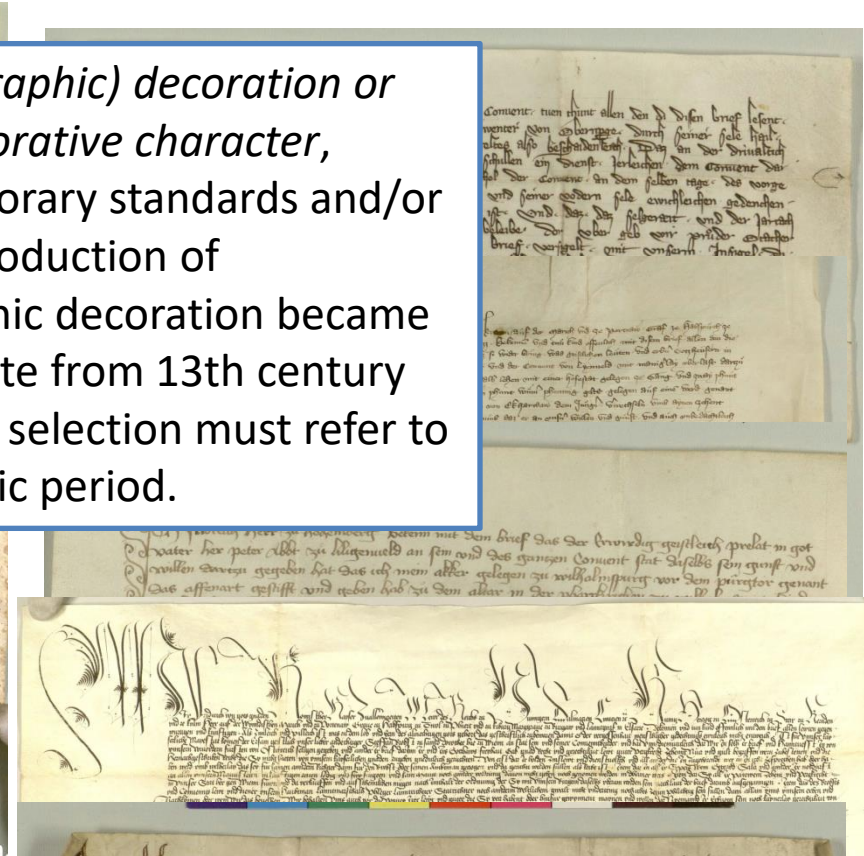
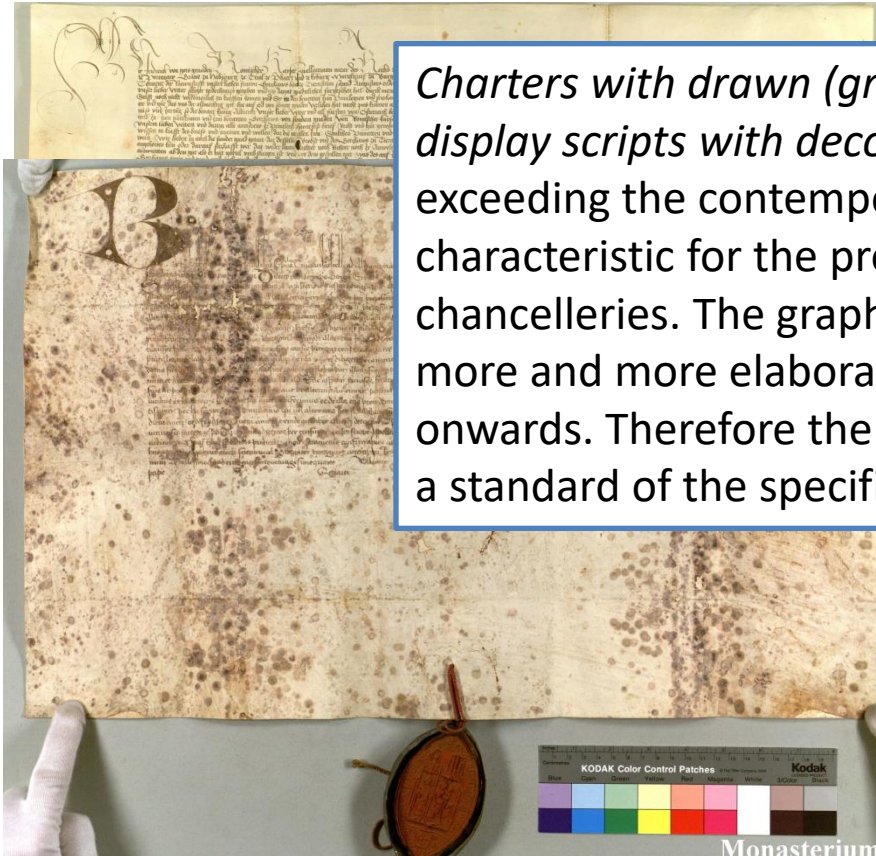
Human: Niveau 2

What the machine sees?

Niveau 1

Niveau 4

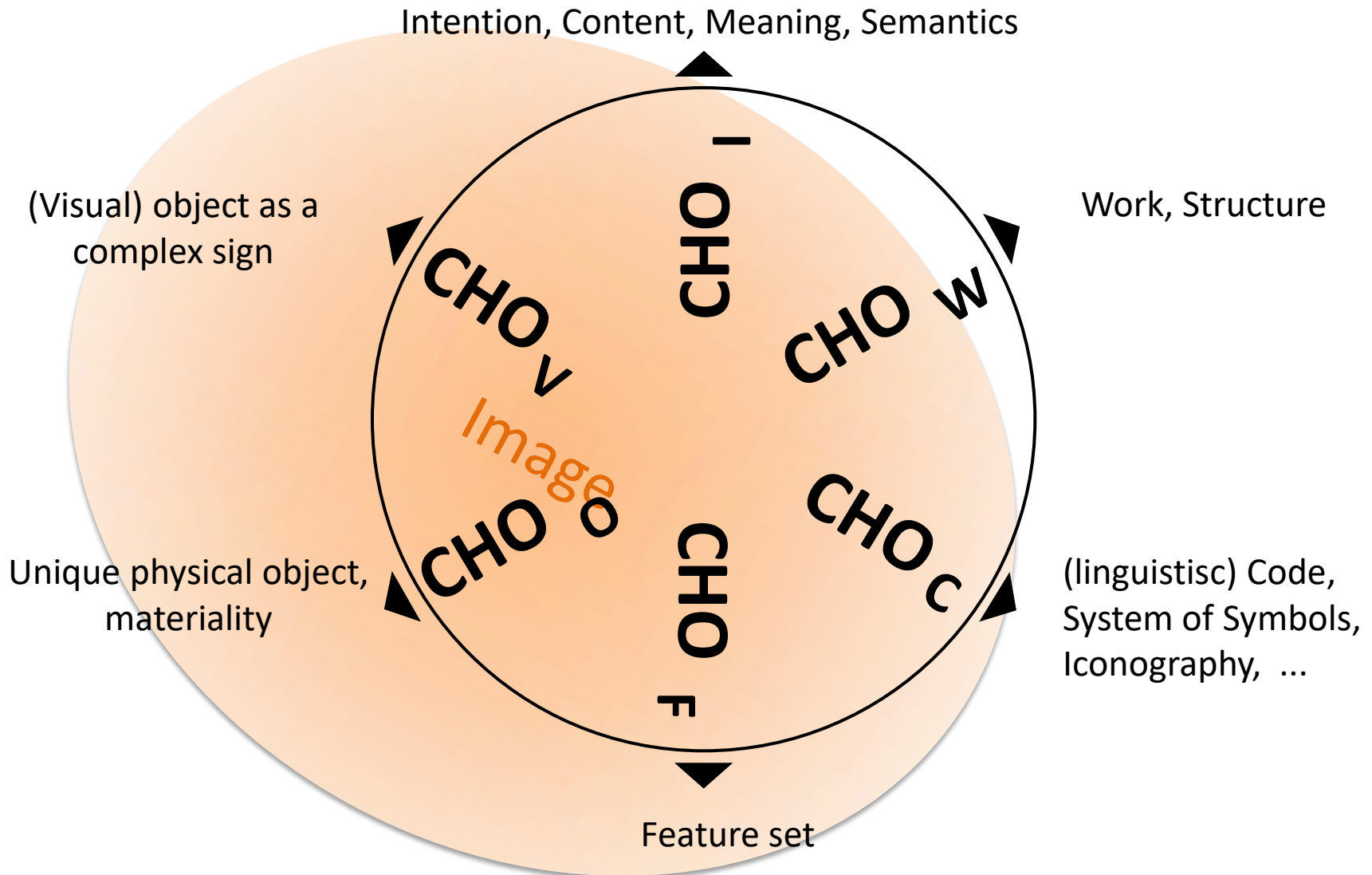
Charters with drawn (graphic) decoration or display scripts with decorative character, exceeding the contemporary standards and/or characteristic for the production of chancelleries. The graphic decoration became more and more elaborate from 13th century onwards. Therefore the selection must refer to a standard of the specific period.



Digital Images as Representations of CHOs

- Allow perception of visual culture
 - Do not allow full perception of the object!
- Allow creation of „visual lists“
(re-contextualisation)
 - Supported by pattern recognition
- Allow approximation to human classification of visual elements:
 - Layout, Existence of visual elements
 - taking into account broader context?

Images in a Pluralistic View on CHO



Computational Analysis of Digital Images of CHOs is a typical DH problem:

1. ... is available for single humanities researchers only for simple tasks
 1. computing power
 2. unfamiliar tools
2. ... needs translational work between CS methods and humanities research interest
3. ... needs to be interpreted by the scholar

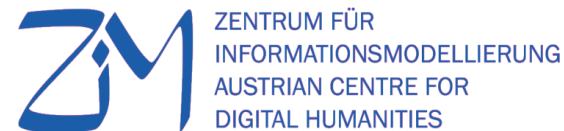
Research possibilities created by making
manuscript images available online
are enhanced by computational analysis
of visual representations of CHO!

Georg Vogeler

georg.vogeler@uni-graz.at



<http://www.i-d-e.de>



<http://gams.uni-graz.at>

Computational Analysis of Visual Representations of CHO

is not yet „digital humanities“

-
but almost!

Georg Vogeler

georg.vogeler@uni-graz.at



<http://www.i-d-e.de>



<http://gams.uni-graz.at>