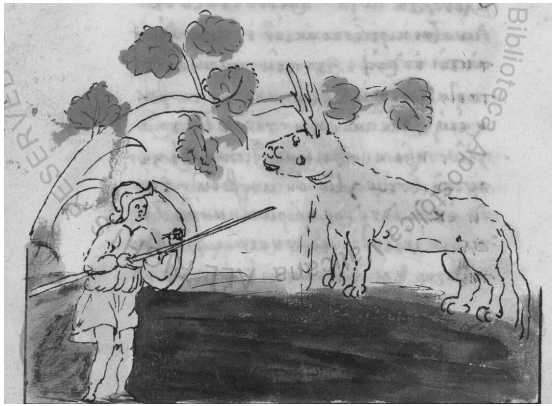
ICDAR
LAUSANNE 2021

Image Collation: Matching illustrations in manuscripts



Ryad Kaoua[1] Xi Shen[1] Alexandra Durr[2] Stavros Lazaris[3] David Picard[1] Mathieu Aubry[1]

1: LIGM, Ecole des Ponts, Univ. Gustave Eiffel, CNRS,Marne-la-Vallee, France
2: Université de Versailles-Saint-Quentin-en-Yvelines, France
3: CNRS (UMR 8167), France

Physiologus

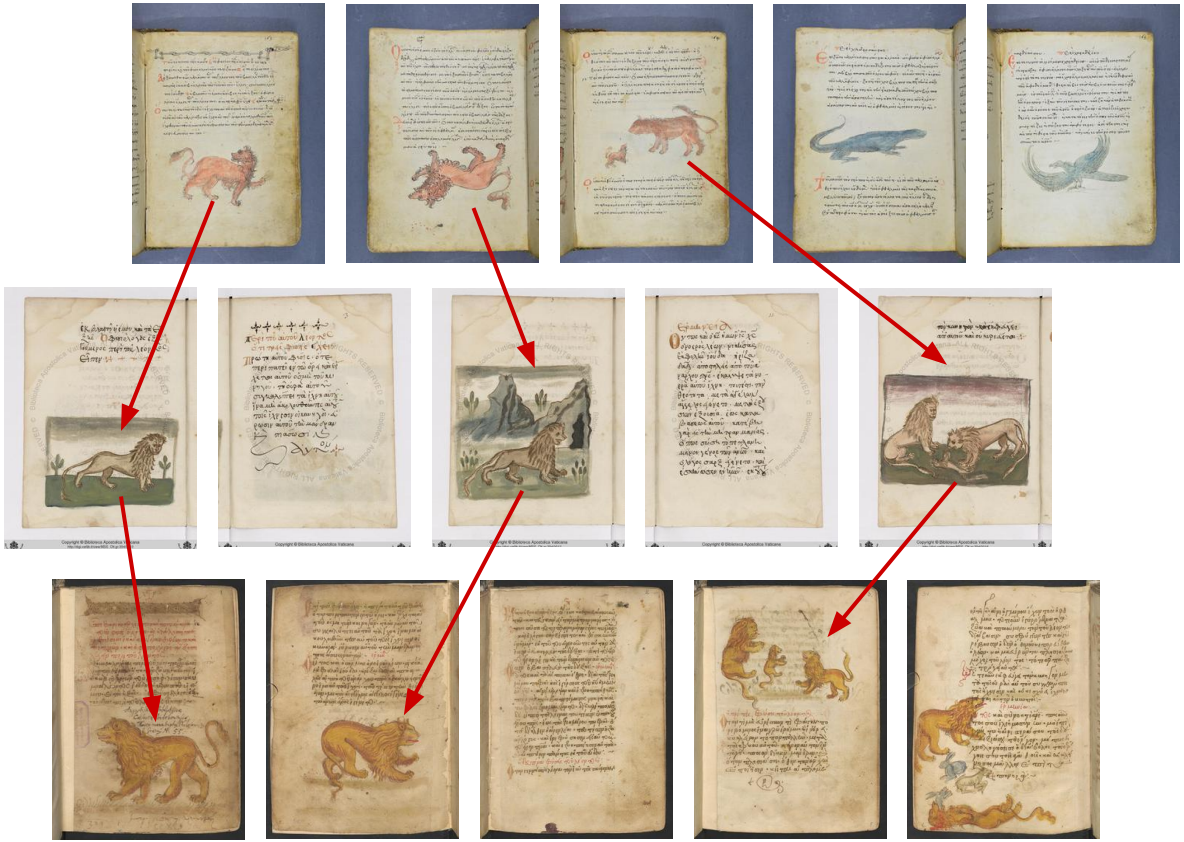


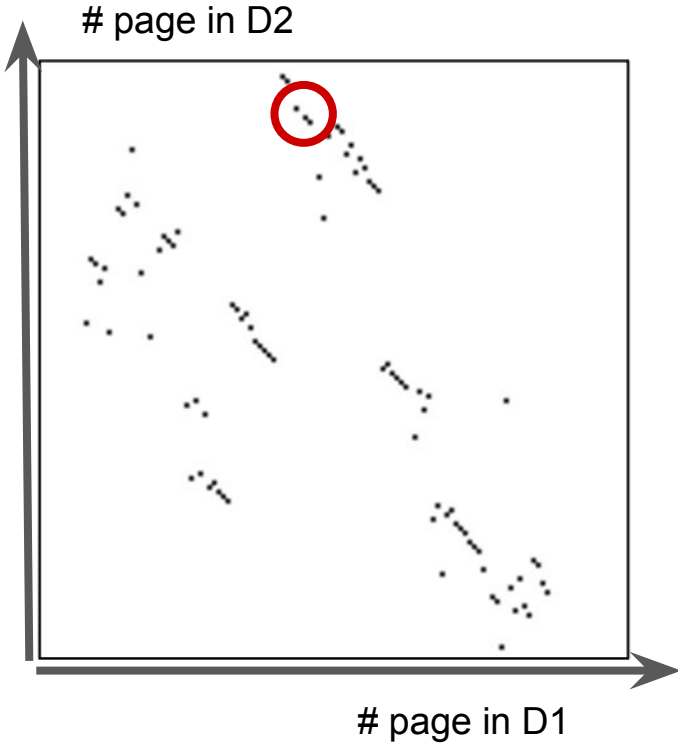


Christian didactic zoological text compiled in Greek during the 2nd century AD

Handwritten copies

Goal: Image correspondences with local structure





Contribution: New dataset

- A dataset with two manuscripts "*Physiologus*" and "*De Materia Medica*" and three copies for each manuscrit.

- More than **2 000** illustrations and **1 200** annotated correspondences.

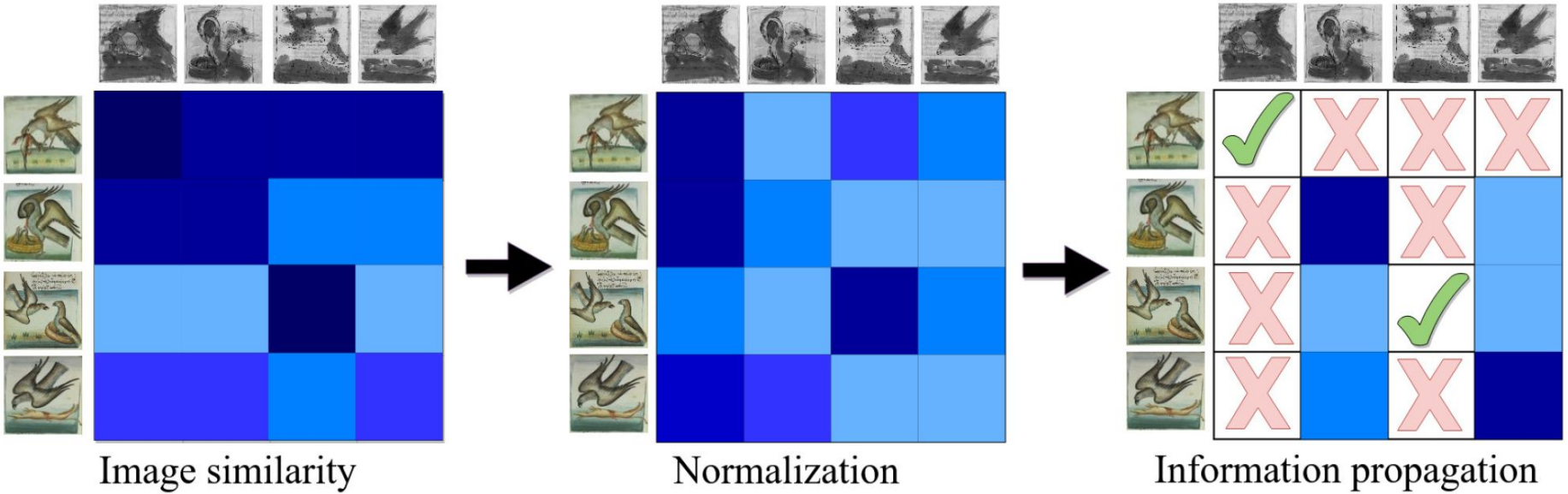
name	code	number of folios	folios' resolution	number of illustrations	annotated correspondences
Physiologus	P1	109	1515x2045	51	P2: 50 - P3: 50
”	P2	176	755x1068	51	P1: 50 - P3: 51
”	P3	188	792x976	52	P1: 50 - P2: 51
De Materia Medica	D1	557	392x555	816	D2: 295 - D3: 524
”	D2	351	1024x1150	405	D1: 295 - D3: 353
”	D3	511	763x1023	839	D1: 524 - D2: 353

Examples

(a) "Physiologus"

(b) "De Materia Medica"

Contribution: Proposed approach



Results on "*De Materia Medica*"

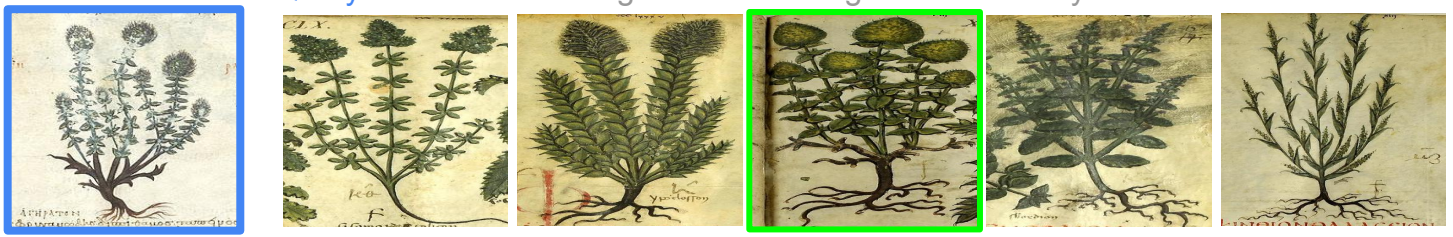
Dataset	[1]	[2]	**Our score**	**Our score + Info. Propagation**
D1-D2	54.6	56.3	**70.5**	**82.5**
D1-D3	69.8	71.3	**85.3**	**88.5**
D1-D3	51.8	51.7	**69.0**	**81.7**

[1] Large-scale historical watermark recognition: dataset and a new consistency-based approach. *Xi Shen et al*. ICPR, 2020

[2] Discovering visual patterns in art collections with spatially-consistent feature learning. *Xi Shen et al.* CVPR, 2019

Visual results

- Query and 5 nearest neighbors according to our similarity score



- Query and 5 nearest neighbors according to our normalized score

- Query and 5 nearest neighbors after information propagation

- Project page : http://imagine.enpc.fr/~shenx/ImageCollation/
- Dataset and implementation : https://github.com/Rykoua/ImageCollation