DRAFT FOR REVIEW

SOLM-2018 data set

Archives & AI

Tuesday, September 4th, 2018
The National Archives
United Kingdom

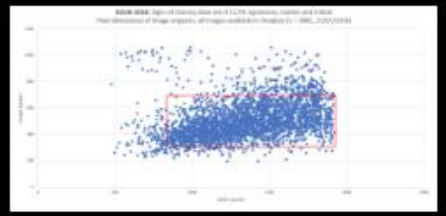
Project portfolio

MarineLives

Maphackathon

Signs of Literacy

SOLM-2018

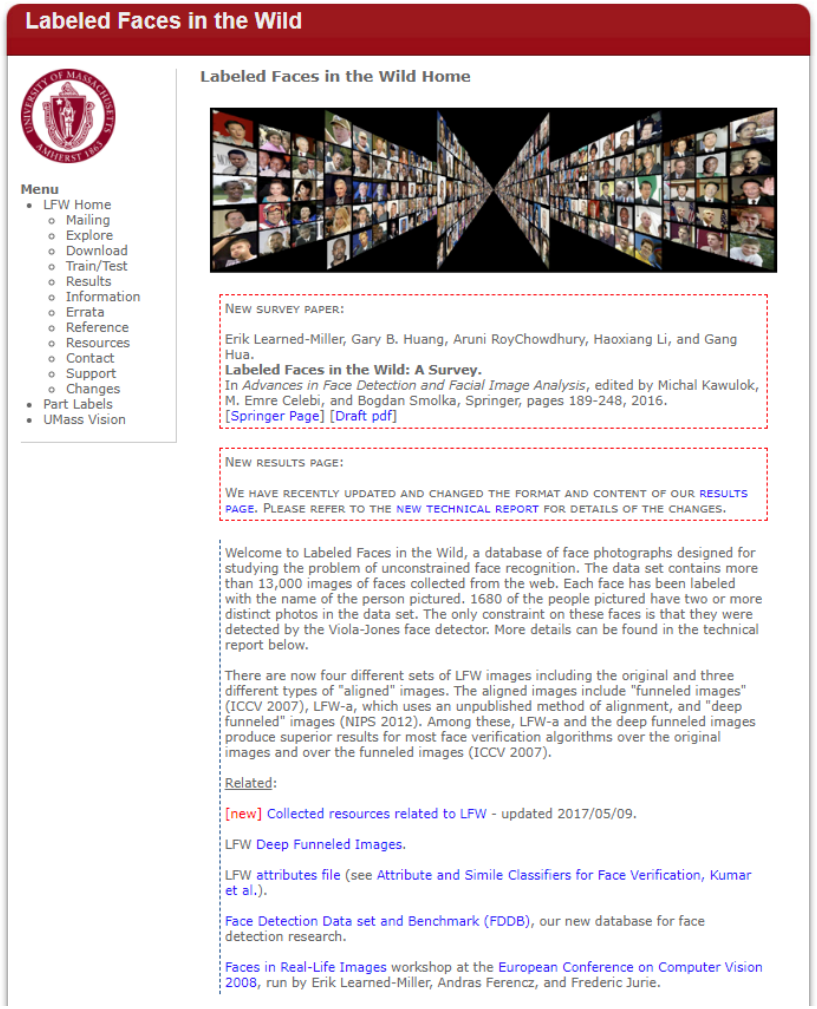


EM Textiles, Garments & Dyestuffs Glossary

EM Maritime & Mercantile Gazetteer

http://www.chronoscopic.org

Some perspective



Labeled Faces in the Wild

Labeled Faces in the Wild Home

Menu

- LFW Home
  - Mailing
  - Explore
  - Download
  - Train/Test
  - Results
  - Information
  - Errata
  - Reference
  - Resources
  - Contact
  - Support
  - Changes
- Part Labels
- UMass Vision

NEW SURVEY PAPER:

Erik Learned-Miller, Gary B. Huang, Aruni RoyChowdhury, Haoxiang Li, and Gang Hua.
Labeled Faces in the Wild: A Survey.
In *Advances in Face Detection and Facial Image Analysis*, edited by Michal Kawulok, M. Emre Celebi, and Bogdan Smolka, Springer, pages 189-248, 2016.
[Springer Page] [Draft pdf]

NEW RESULTS PAGE:

WE HAVE RECENTLY UPDATED AND CHANGED THE FORMAT AND CONTENT OF OUR RESULTS PAGE. PLEASE REFER TO THE NEW TECHNICAL REPORT FOR DETAILS OF THE CHANGES.

Welcome to Labeled Faces in the Wild, a database of face photographs designed for studying the problem of unconstrained face recognition. The data set contains more than 13,000 images of faces collected from the web. Each face has been labeled with the name of the person pictured. 1680 of the people pictured have two or more distinct photos in the data set. The only constraint on these faces is that they were detected by the Viola-Jones face detector. More details can be found in the technical report below.

There are now four different sets of LFW images including the original and three different types of "aligned" images. The aligned images include "funneled images" (ICCV 2007), LFW-a, which uses an unpublished method of alignment, and "deep funneled" images (NIPS 2012). Among these, LFW-a and the deep funneled images produce superior results for most face verification algorithms over the original images and over the funneled images (ICCV 2007).

Related:

[new] Collected resources related to LFW - updated 2017/05/09.

LFW Deep Funneled Images.

LFW attributes file (see Attribute and Simile Classifiers for Face Verification, Kumar et al.).

Face Detection Data set and Benchmark (FDDB), our new database for face detection research.

Faces in Real-Life Images workshop at the European Conference on Computer Vision 2008, run by Erik Learned-Miller, Andras Ferencz, and Frederic Jurie.

Abstract In 2007, Labeled Faces in the Wild was released in an effort to spur research in face recognition, specifically for the problem of face verification with unconstrained images. Since that time, more than 50 papers have been published that improve upon this benchmark in some respect. A remarkably wide variety of innovative methods have been developed to overcome the challenges presented in this database. As performance on some aspects of the benchmark approaches 100% accuracy, it seems appropriate to review this progress, derive what general principles we can from these works, and identify key future challenges in face recognition. In this survey, we review the contributions to LFW for which the authors have provided results to the curators (results found on the LFW results web page). We also review the cross cutting topic of alignment and how it is used in various methods. We end with a brief discussion of recent databases designed to challenge the next generation of face recognition algorithms.

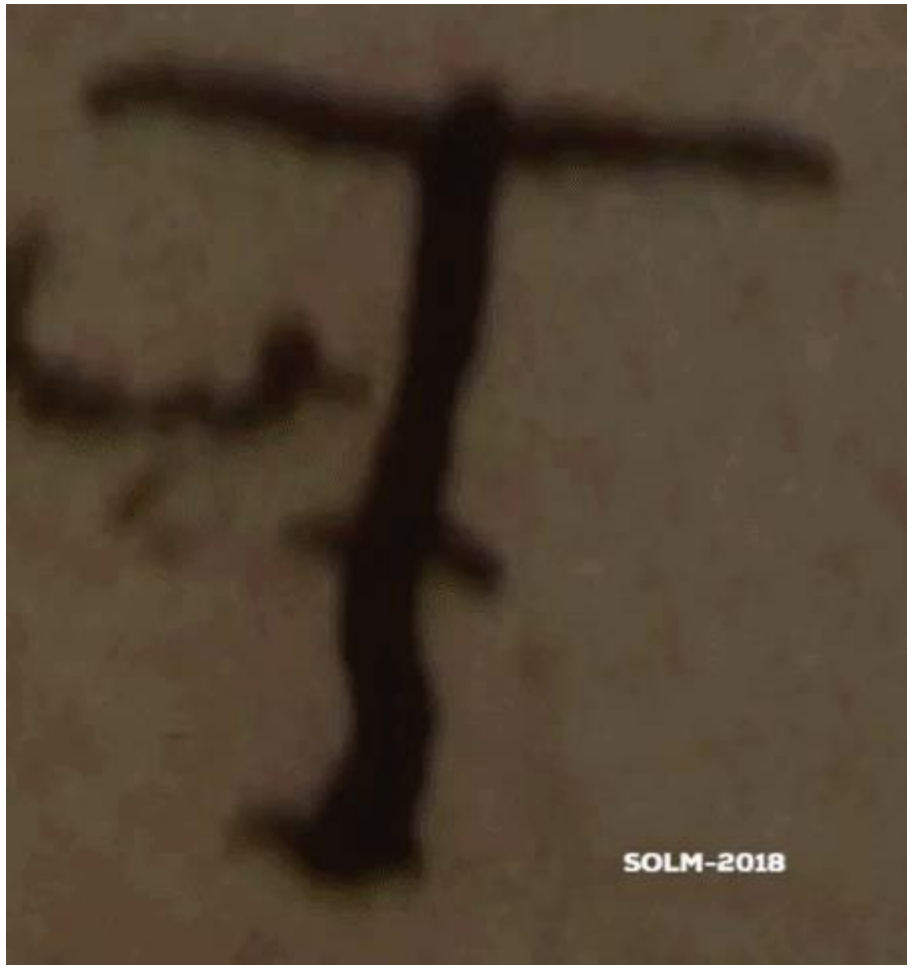
Labeled Faces in the Wild: A Survey

Erik Learned-Miller, Gary Huang, Aruni RoyChowdhury, Haoxiang Li, Gang Hua

Source: http://vis-www.cs.umass.edu/lfw/

Pattern seeking

How many different letters can you recognise?



Click for animated GIF

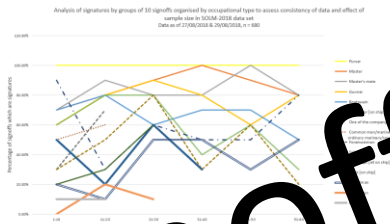
Source: SOLM-2018 database

Initials – Ts and Js

Source: SOLM-2018 database

SOLM-2018 database

The **SOLM-2018 database** is a tool for historians and computer scientists to work with markes, initials and signatures. It has been designed to support the exploration of historical literacy and the development of tools for automatic metadata creation.



We will be previewing the database at the TNA Archives & AI symposium on Tuesday, September 4th and at the Sheffield Digital Humanities Congress on Thursday, September 6th, 2018.

We are looking for UK and international archival partners interested in contributing content to the SOLM-2018 tool and in learning about AI based pattern recognition.

We are especially interested in manuscripts containing markes, initials and signatures by individuals engaged in marine and shore trade occupations from the following English towns and areas for the C16th, C17th and C18th:

Aldeburgh [Suffolk]	Dover [Kent]	Ipswich [Suffolk]	Stepney
Barnstaple [Devon]	Falmouth [Devon]	Newcastle	Weymouth [Dorset]
Bermondsey	Faversham [Kent]	Plymouth [Devon]	Woodbridge [Suffolk]
Bristol	Foy [Cornwall]	Rochester [Kent]	Yarmouth [Norfolk]
Colchester [Essex]	Greenwich	Rotherhithe	
Dartmouth [Devon]	Harwich [Essex]	Southampton	
Deptford	Hull	Southwark	

5000 signoffs and growing

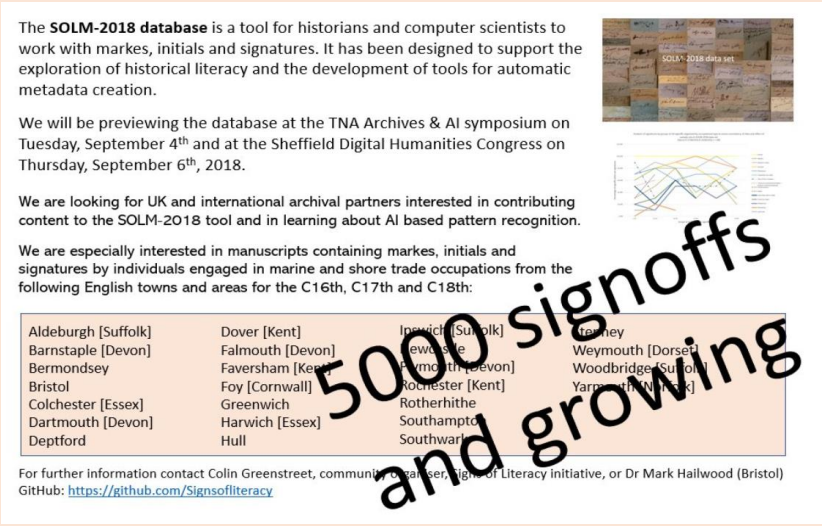
For further information contact Colin Greenstreet, community organiser, Signs of Literacy initiative, or Dr Mark Hailwood (Bristol)
GitHub: https://github.com/Signsofliteracy

Our vision is a SOLM-2023 database with 1 million markes, initials & signatures from across Europe & North America from the C16th to C18th

The maths

- 3 person/months to create 5,000 signoff SOLM-2018 database consisting of image snippets; boundary boxed snippets on full page images; 5,000 lines x 15 rows of metadata
- 6 person/months to create our targeted 10,000 SOLM-2018 training database
- 20,000 signoff processing per person year
- Target of 1 million signoffs in our database
- 100,000 signoffs per year with 5 people working full time

That's TEN YEARS to achieve our vision
with 50 person years to do it!!!!!



The **SOLM-2018 database** is a tool for historians and computer scientists to work with markes, initials and signatures. It has been designed to support the exploration of historical literacy and the development of tools for automatic metadata creation.

We will be previewing the database at the TNA Archives & AI symposium on Tuesday, September 4th and at the Sheffield Digital Humanities Congress on Thursday, September 6th, 2018.

We are looking for UK and international archival partners interested in contributing content to the SOLM-2018 tool and in learning about AI based pattern recognition.

We are especially interested in manuscripts containing markes, initials and signatures by individuals engaged in marine and shore trade occupations from the following English towns and areas for the C16th, C17th and C18th:

Aldeburgh [Suffolk]	Dover [Kent]	Ipswich [Suffolk]	Lyme Regis
Barnstaple [Devon]	Falmouth [Devon]	Lewes [Sussex]	Weymouth [Dorset]
Bermondsey	Faversham [Kent]	Plymouth [Devon]	Woodbridge [Suffolk]
Bristol	Foy [Cornwall]	Rochester [Kent]	Yarmouth [Norfolk]
Colchester [Essex]	Greenwich	Rotherhithe	
Dartmouth [Devon]	Harwich [Essex]	Southampton	
Deptford	Hull	Southwark	

For further information contact Colin Greenstreet, community organiser of Signs of Literacy initiative, or Dr Mark Hailwood (Bristol)
GitHub: https://github.com/Signsofliteracy

50,000 signoffs and growing

Our challenge to archivists, computer scientists and historians: Help us develop the tools to create a SOLM-2023 database of 1 mill signoffs with a productivity rate of ten times today's best, at a resource cost of 5 person/years, not 50 person/years, and in half the time

More generally, we need to work together, if we are going to make sense of our digitised manuscript archives – **developing AI tools to process archival images and to identify, extract, read and record metadata**

For more information contact Colin Greenstreet, community organiser of the Signs of Literacy initiative, and Dr Mark Hailwood (Bristol)
https://github.com/Signsofliteracy

We are looking for partners in the United Kingdom and internationally

Signs of Literacy Kaggle Research Competition, Nov 2018 – Jan 2019

Google owned Kaggle has selected us as one of a small number of pro bono competitions they support each year on the merits of our proposal, and the potential impact on the research field and community of the competition.

Kaggle will cover the running costs of the competition. We will provide the prize pool, and are now seeking to raise US $30,000 from potential sponsors and partners.

The Proof of Concept will contain two parts:

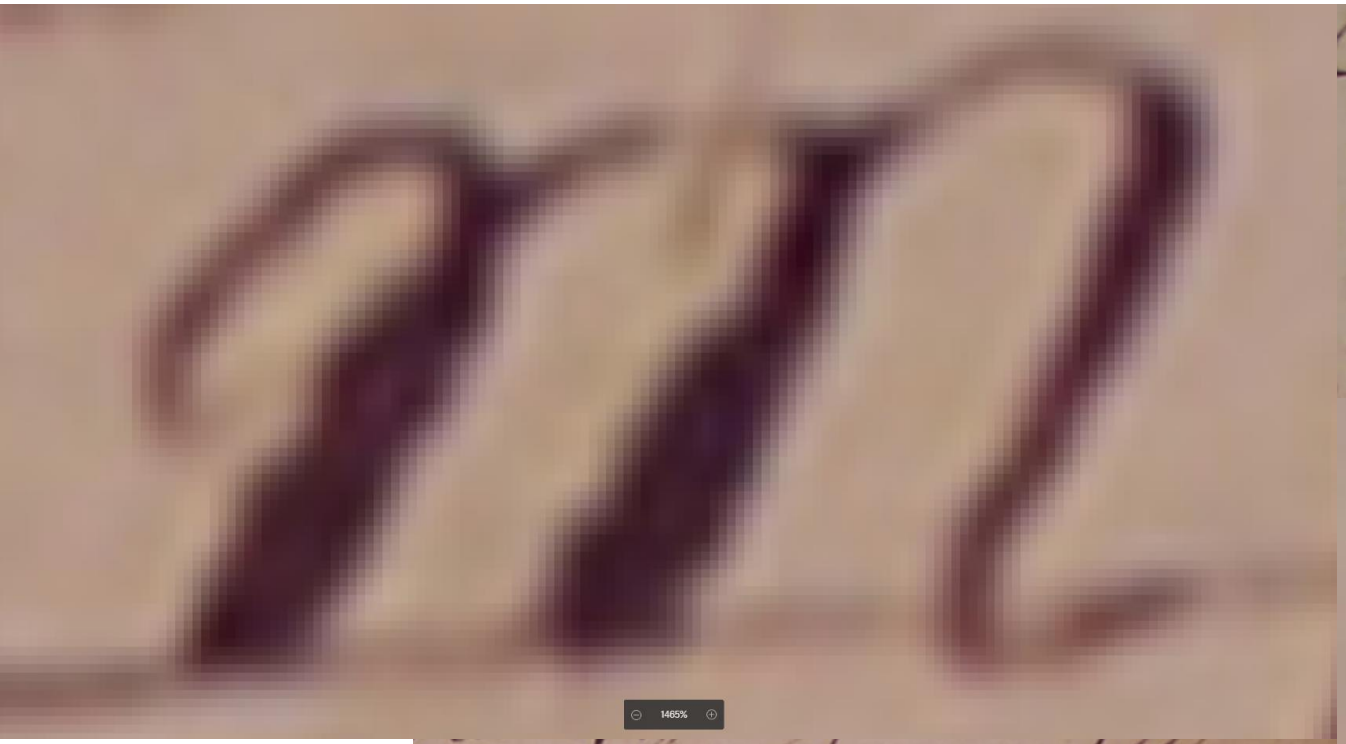
(1) Algorithmic identification of markes, initials and signatures.

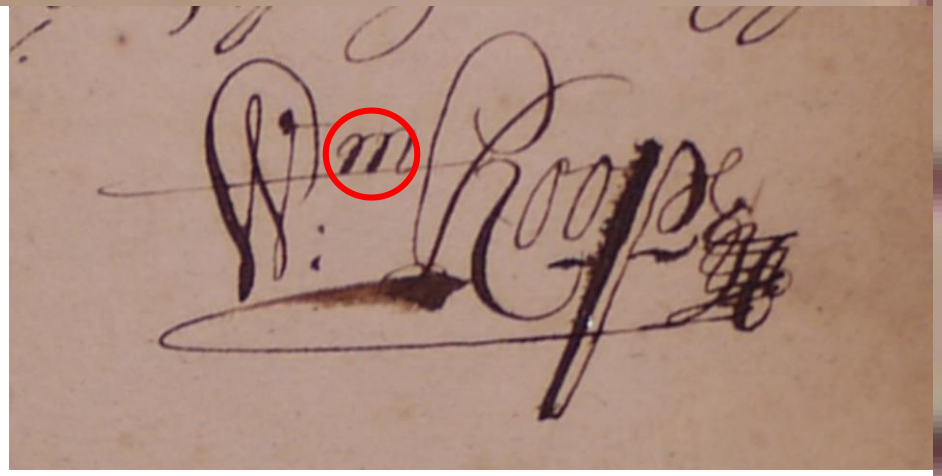
(2) Algorithmic discrimination between degrees of "sophistication" within the three categories of "marke"; "initial(s)", and "signature".

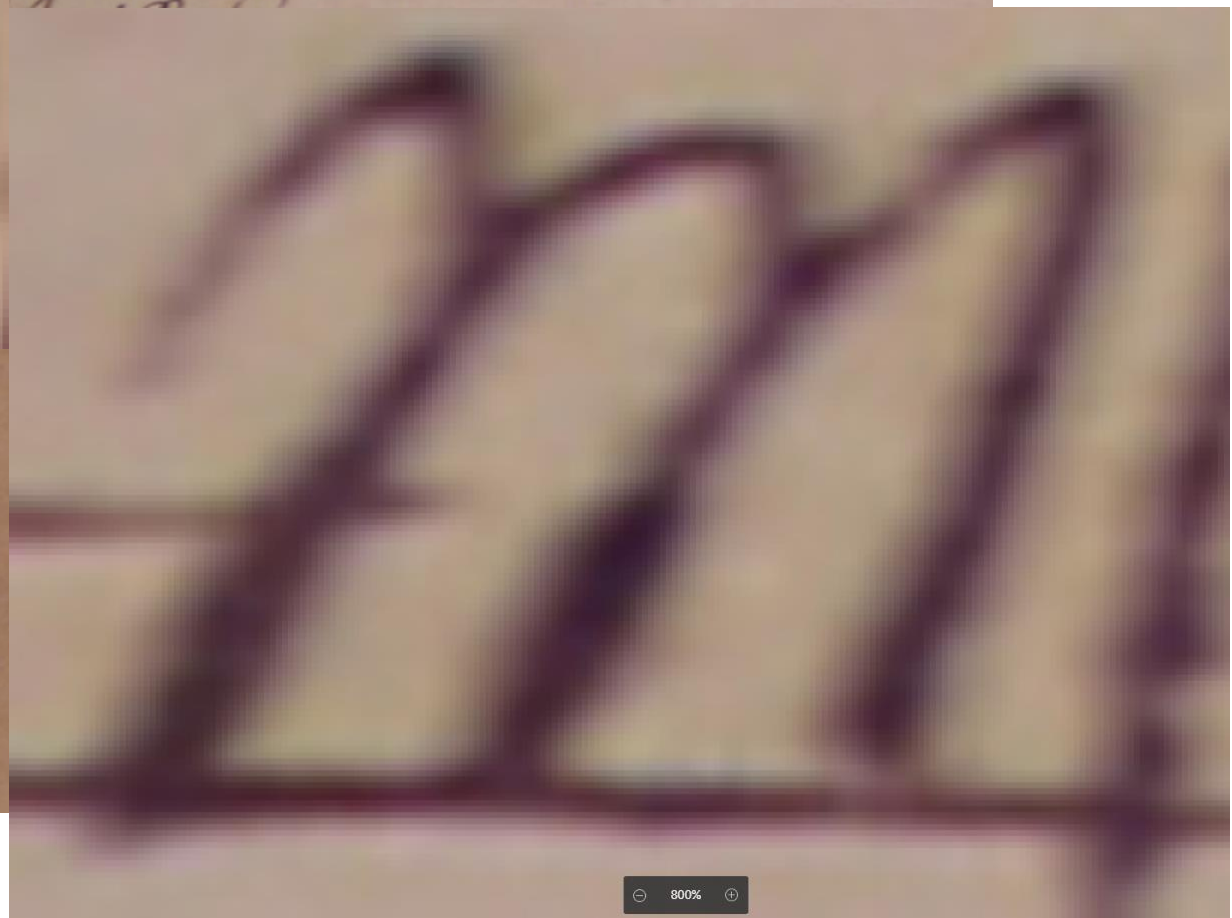
Having proven the concept, we will seek out an image or vision oriented computational laboratory with which to develop a grant funded collaboration to take the work further in 2019 and beyond.

https://www.linkedin.com/pulse/proposed-signs-literacy-kaggle-research-competition-2018-greenstreet/

High pixel definition

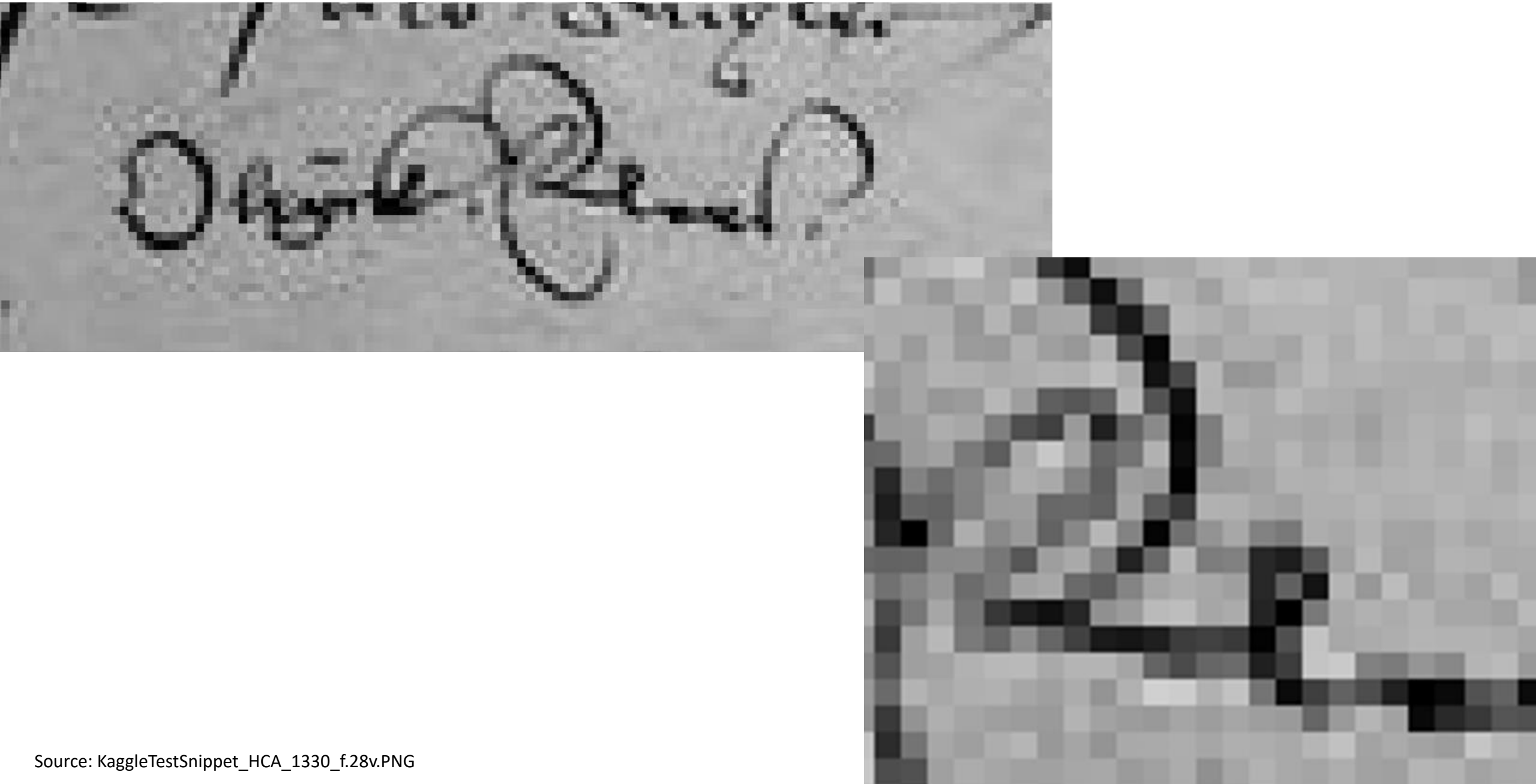






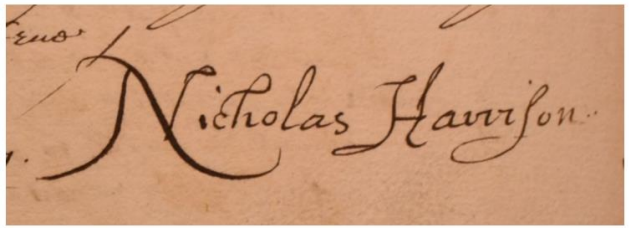
Source: KaggleTestSnippet_HCA_1373_f.199r.PNG,
KaggleTestSnippet_HCA_1373_f.199v_One.PNG

Low pixel definition



Source: KaggleTestSnippet_HCA_1330_f.28v.PNG

Colour analysis – image colour extract PHP, hexadecimal colours

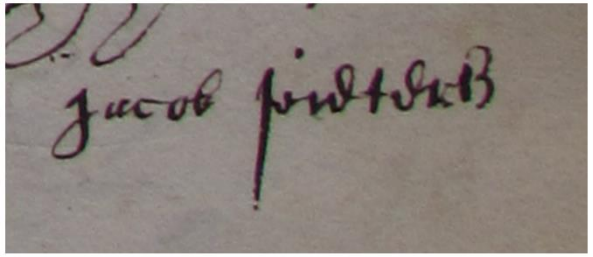


Color	Color Code	Percentage
	#e0a080	0.855975
	#c08060	0.084403
	#806040	0.039371
	#604020	0.013208
	#402020	0.007044

File to upload:
Choose File No file chosen
Number of colors:
10
delta:
32
(1-255)
Reduce Brightness: Yes No
Reduce gradient: Yes No
Run

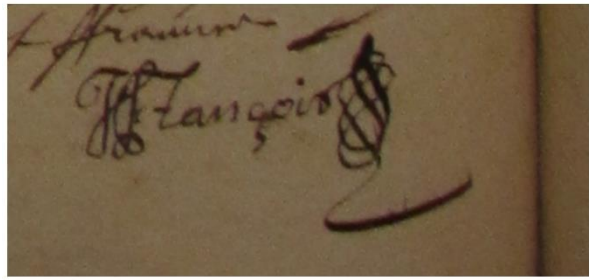
Color	Color Code	Percentage
	#c08060	0.883721
	#806040	0.063798
	#604020	0.048605
	#402000	0.003876

File to upload:
Choose File No file chosen
Number of colors:
10
delta:
32
(1-255)
Reduce Brightness: Yes No
Reduce gradient: Yes No



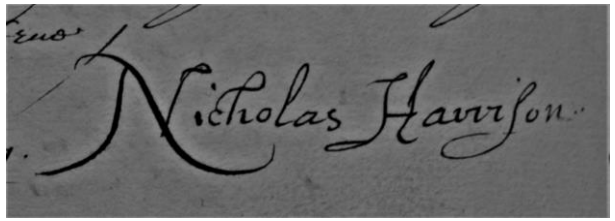
Color	Color Code	Percentage
	#808080	0.969271
	#604040	0.030729

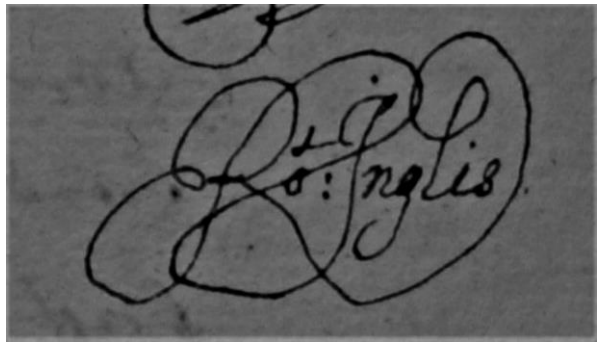
File to upload:
Choose File No file chosen
Number of colors:
10
delta:
32
(1-255)
Reduce Brightness: Yes No
Reduce gradient: Yes No
Run

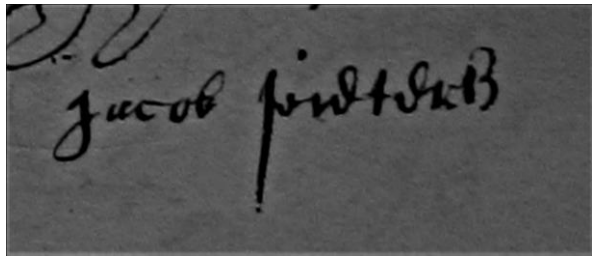


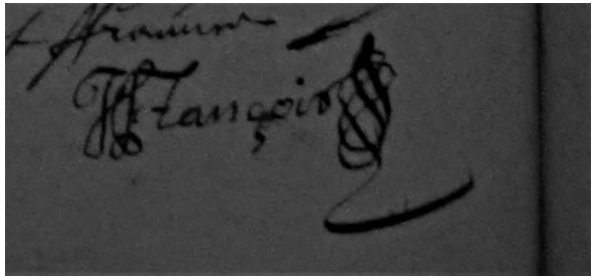
Color	Color Code	Percentage
	#806040	0.806762
	#604020	0.125143
	#402020	0.062000
	#202000	0.006095

File to upload:
Choose File No file chosen
Number of colors:
10
delta:
32
(1-255)
Reduce Brightness: Yes No
Reduce gradient: Yes No
Run



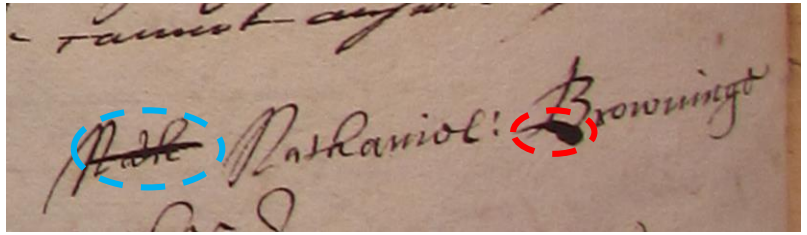


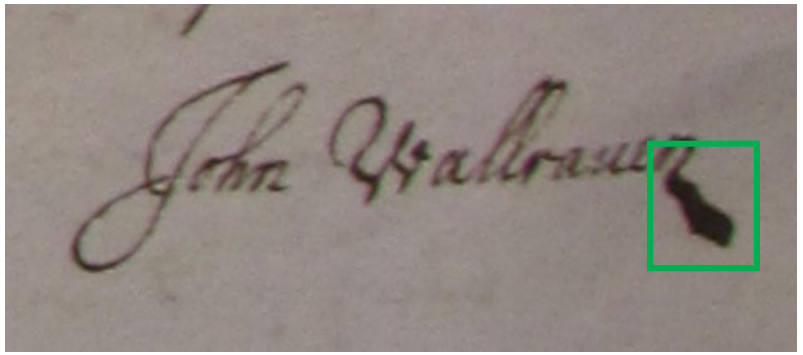


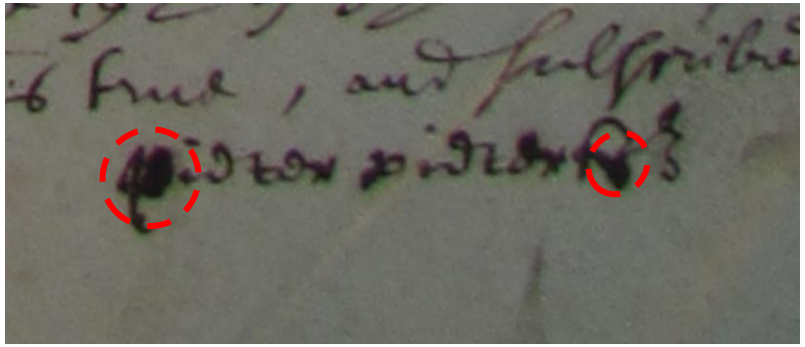


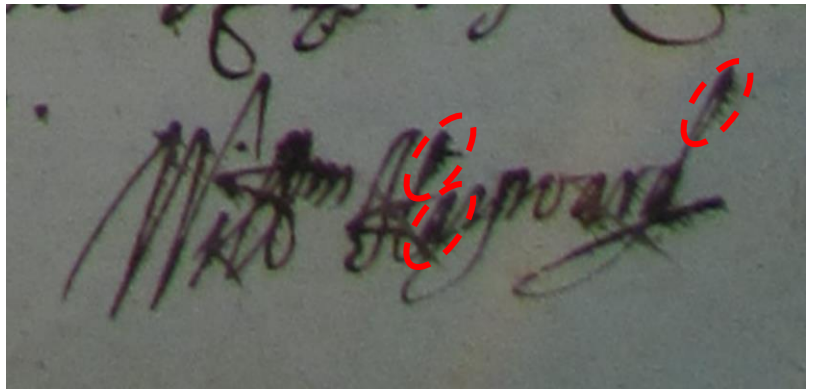
Source: Sample images from SOLM-2018 (KaggleTestSnippet_HCA_1353_f.275v.PNG, KaggleTestSnippet_HCA_1353_f.270v_Two.PNG, KaggleTestSnippet_HCA_1370_f.463r_One.PNG, KaggleTestSnippet_HCA_1368_f.497v.PNG) processed in http://www.coolphptools.com/color_extract#demo; same images reprocessed in Photos SW package, with adjustments set to 0% light, 0% colour, 100% clarity

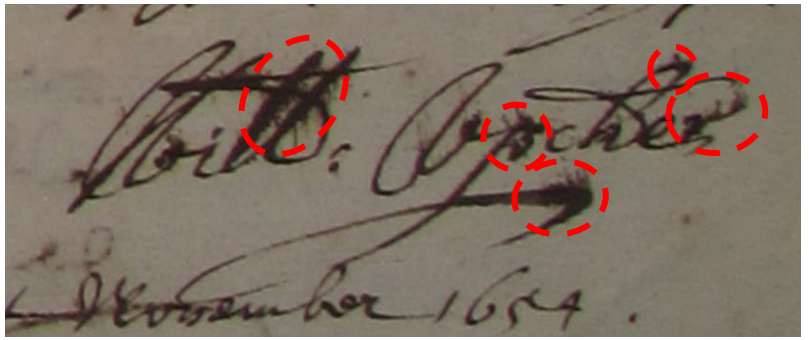
Detection and analysis of blots, smudges, stylistic features, & deletions

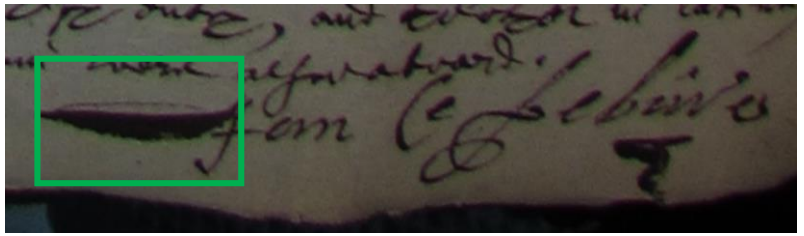




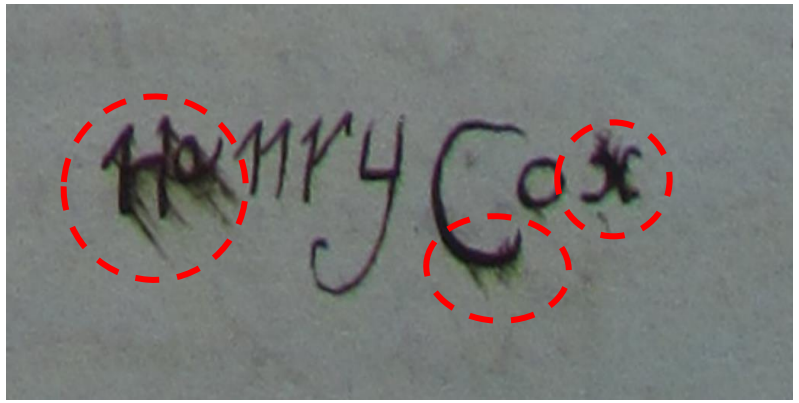


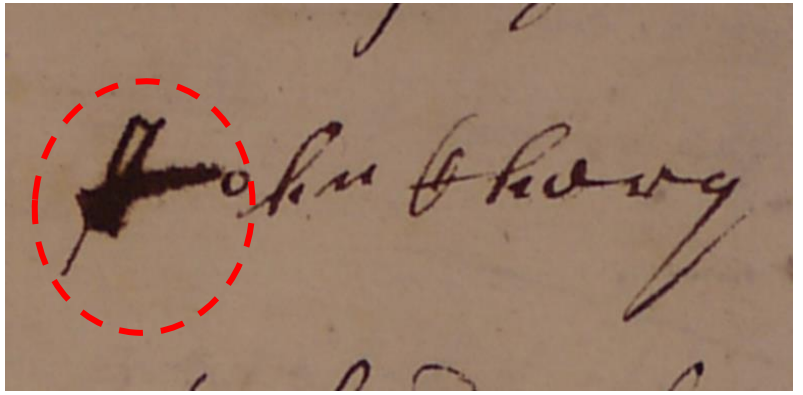






Source: Clockwise from top LH side:
KaggleTestSnippet_HCA_1370_f.387v.PNG,
KaggleTestSnippet_HCA_1370_f.13r.PNG,
KaggleTestSnippet_HCA_1370_f.167r.PNG,
KaggleTestSnippet_HCA_1371_f.456r.PNG,
KaggleTestSnippet_HCA_1370_f.15r.PNG,
KaggleTestSnippet_HCA_1370_f.19r.PNG,
KaggleTestSnippet_HCA_1370_f.41v.PNG,
KaggleTestSnippet_HCA_1370_f.17v.PNG



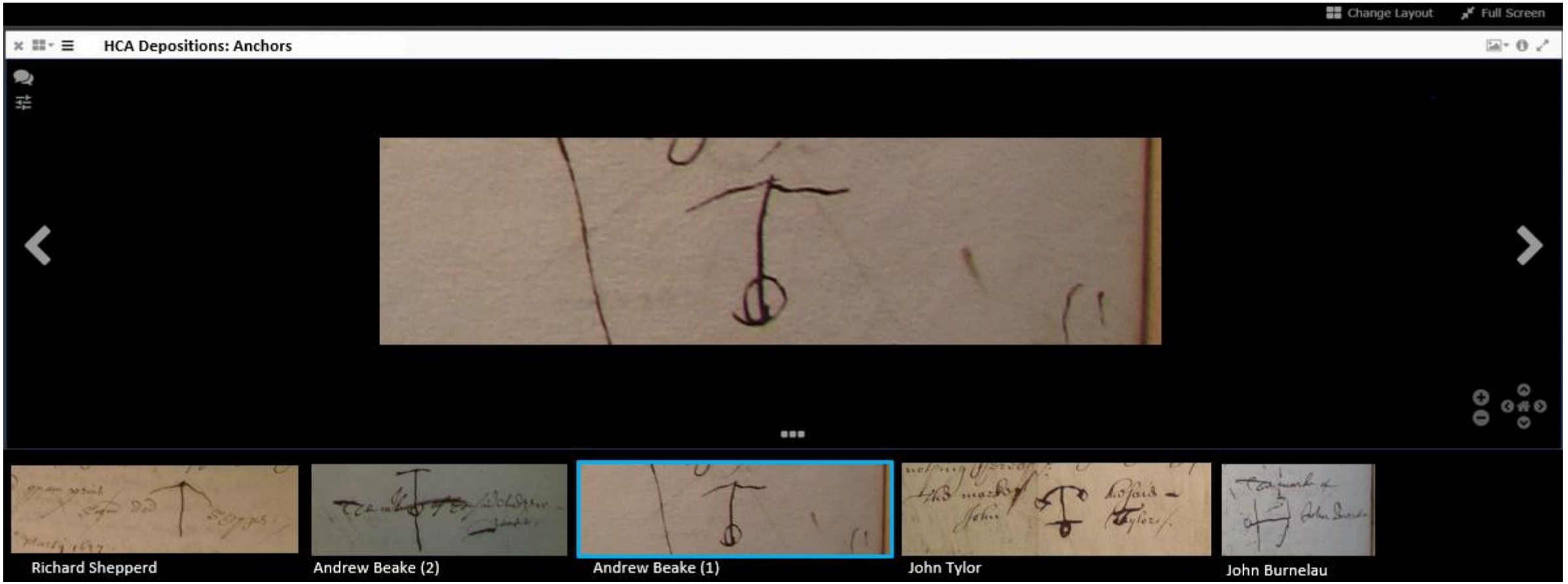


Ink blots or smudges

Stylistic feature or smudge?

Deletion

SOLM-2018 IIIF anchors manifest in Mirador viewer

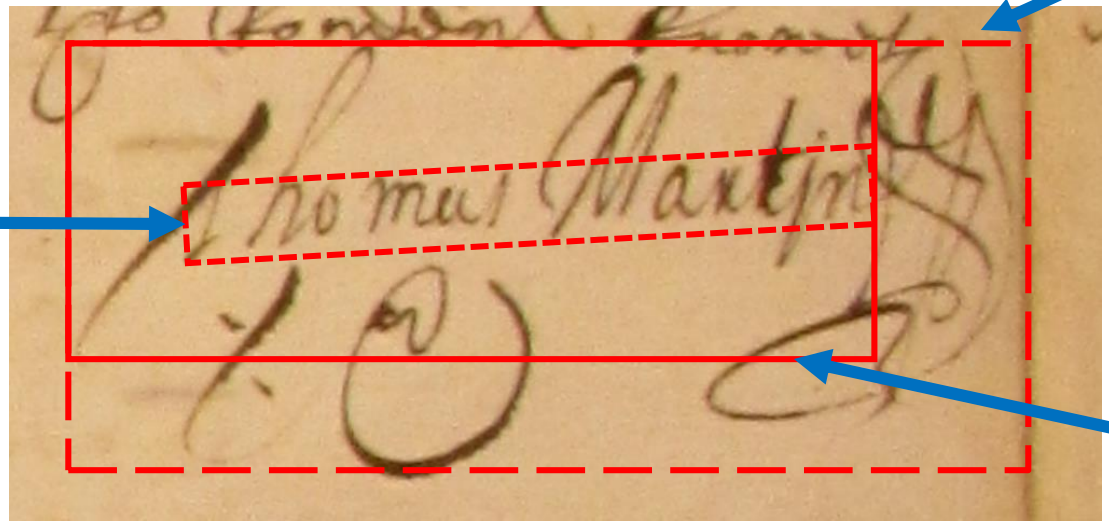


Mockup of a IIIF manifest in Mirador viewer, using http://projectmirador.org/demo/ ;
http://www.marinelives.org/wiki/HCA_13/70_f.252v_Annotate

Boundary boxes marking the visual geometry of a signature

Outside boundary box, including flourish

Inside boundary box, excluding uppers and downers

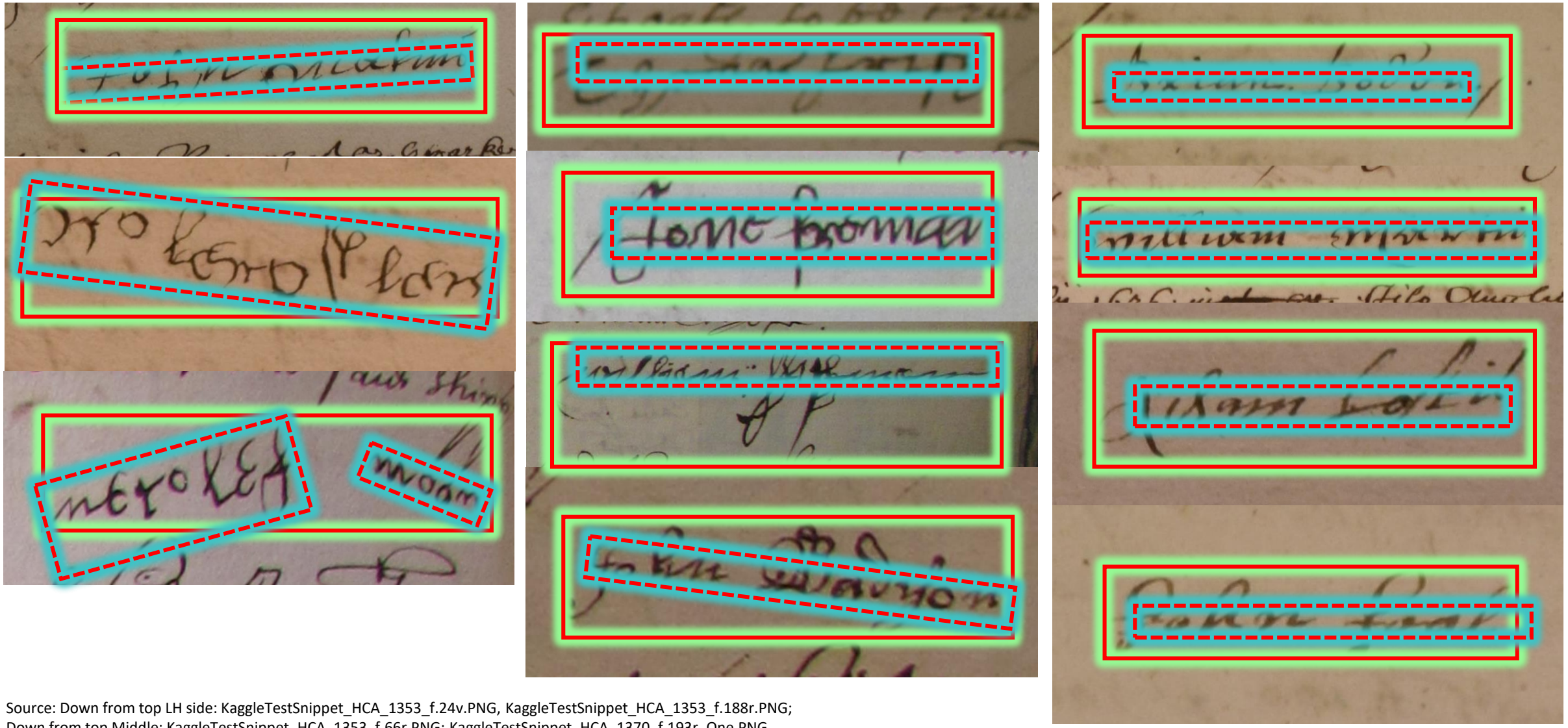


Middle boundary box, including all letters, but excluding flourish

Statistics

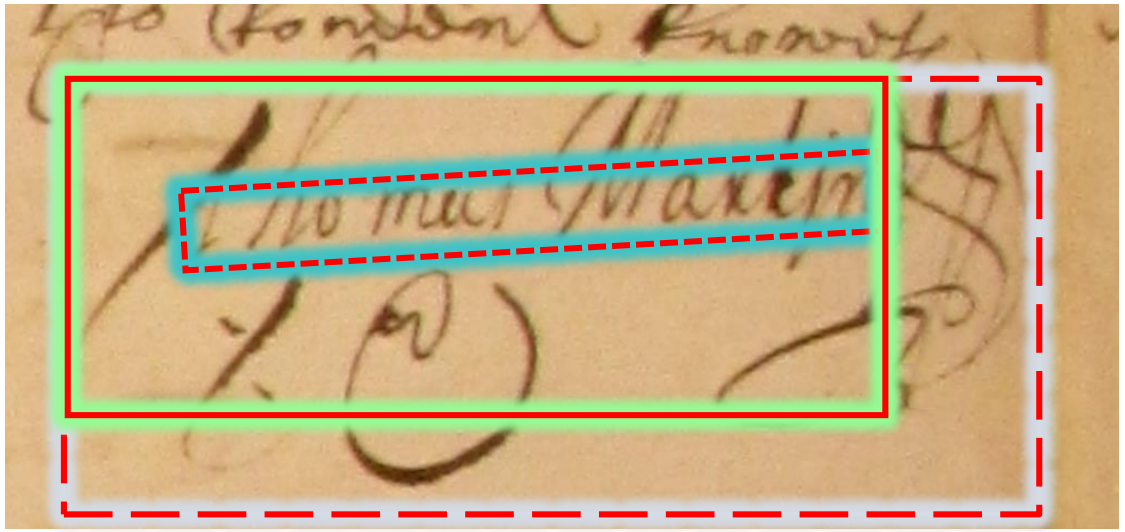
Inside boundary box: 9.0 x 1.1
Middle boundary box: 9.75 x 4.25
Outside boundary box: 12.75 x 5.75
Rotation from horizontal: ca. 340 degrees

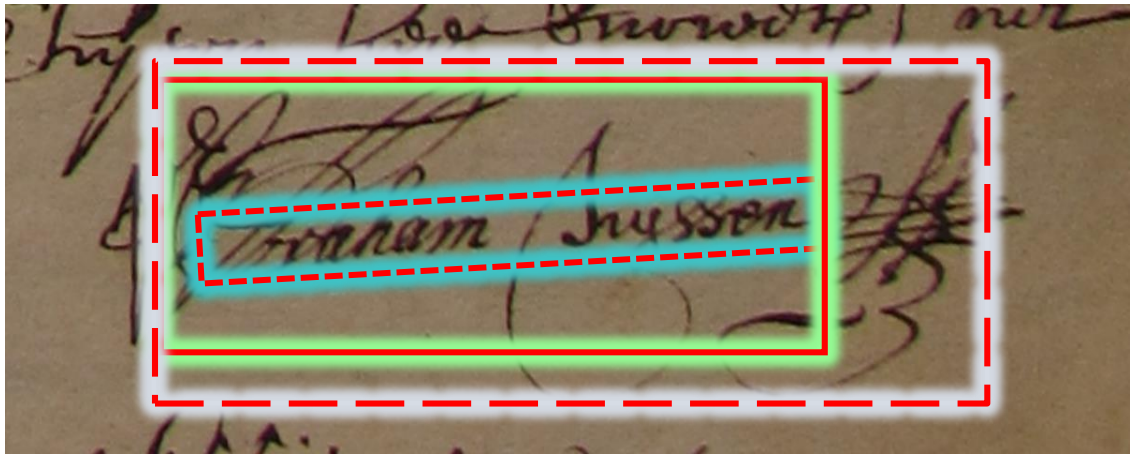
Simple signatures, no flourishes

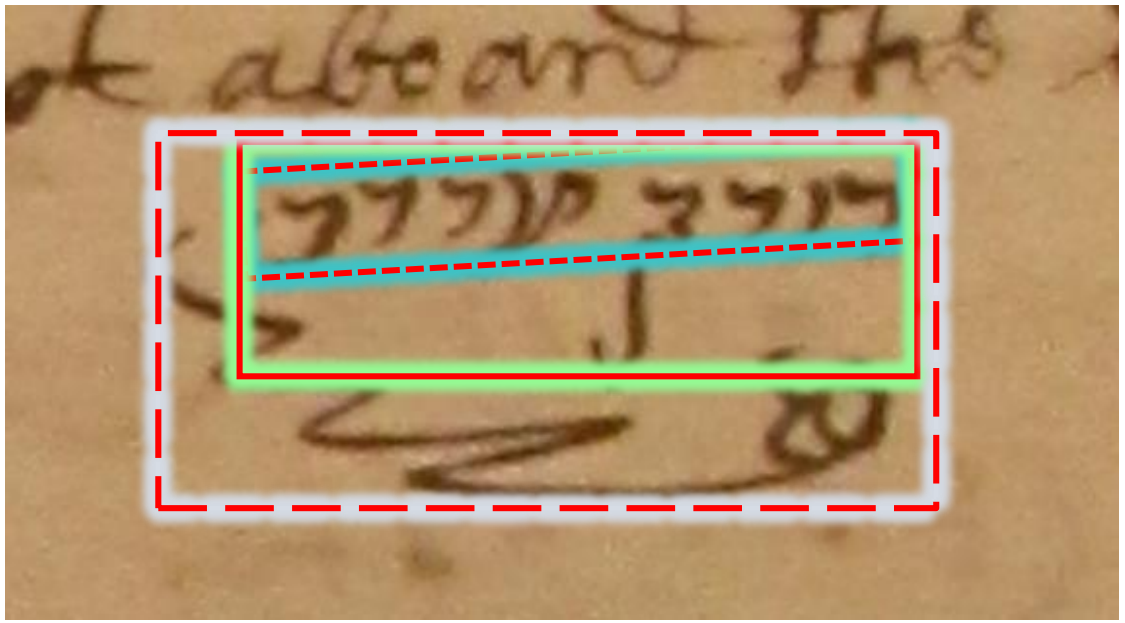


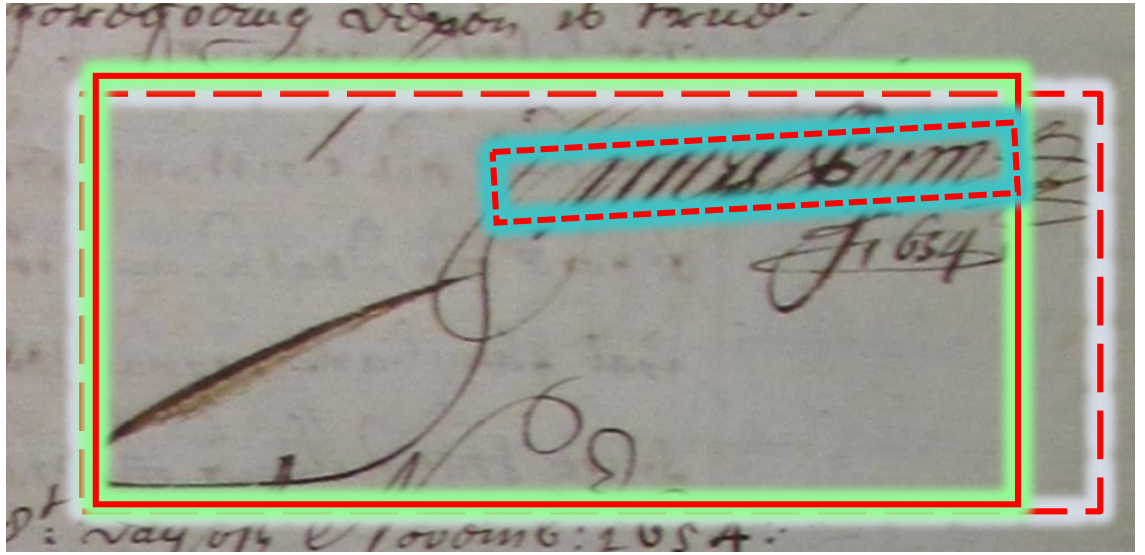
Source: Down from top LH side: KaggleTestSnippet_HCA_1353_f.24v.PNG, KaggleTestSnippet_HCA_1353_f.188r.PNG;
Down from top Middle: KaggleTestSnippet_HCA_1353_f.66r.PNG; KaggleTestSnippet_HCA_1370_f.193r_One.PNG,
KaggleTestSnippet_HCA_1370_f.203r.PNG, KaggleTestSnippet_HCA_1370_f.218r.PNG
Down from top RH SIDE: KaggleTestSnippet_HCA_1353_f.28v.PNG, KaggleTestSnippet_HCA_1353_f.29v_One.PNG,
KaggleTestSnippet_HCA_1353_f.35r.PNG, KaggleTestSnippet_HCA_1353_f.36v.PNG

Visual geometries of flourishes – C17th Irish, Dutch, English & Moroccan merchants



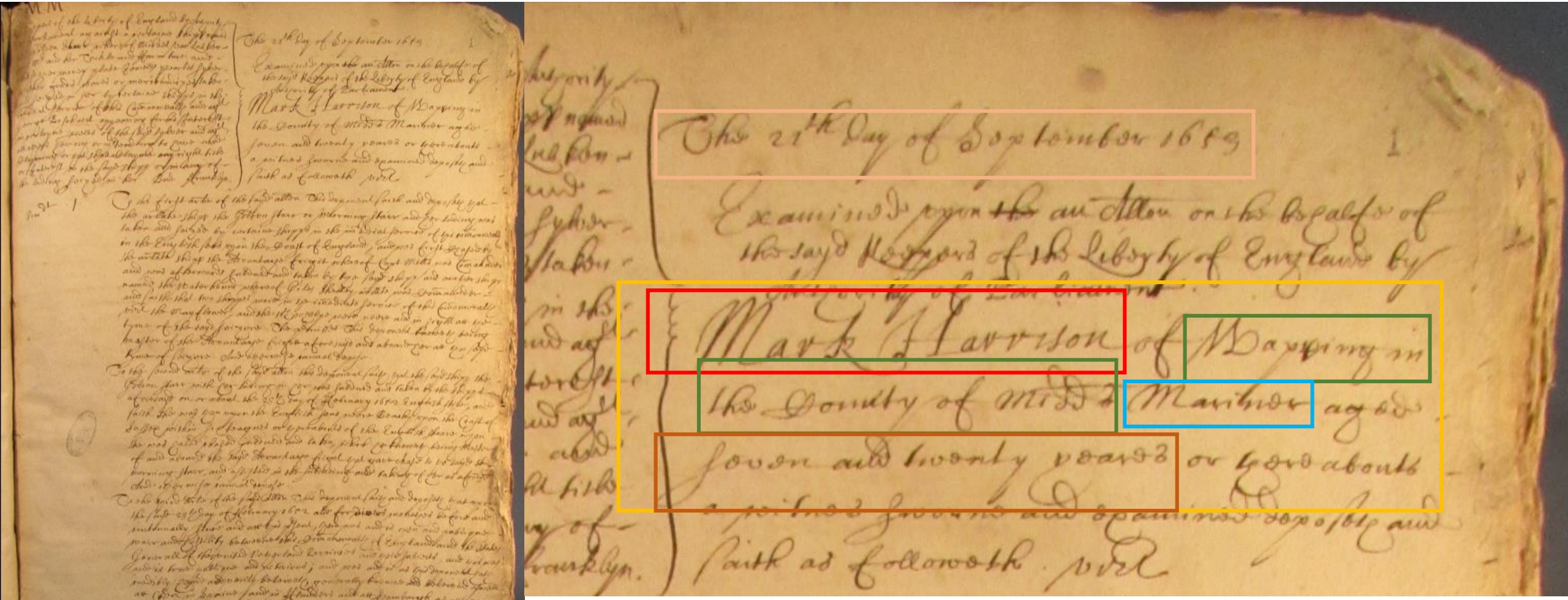






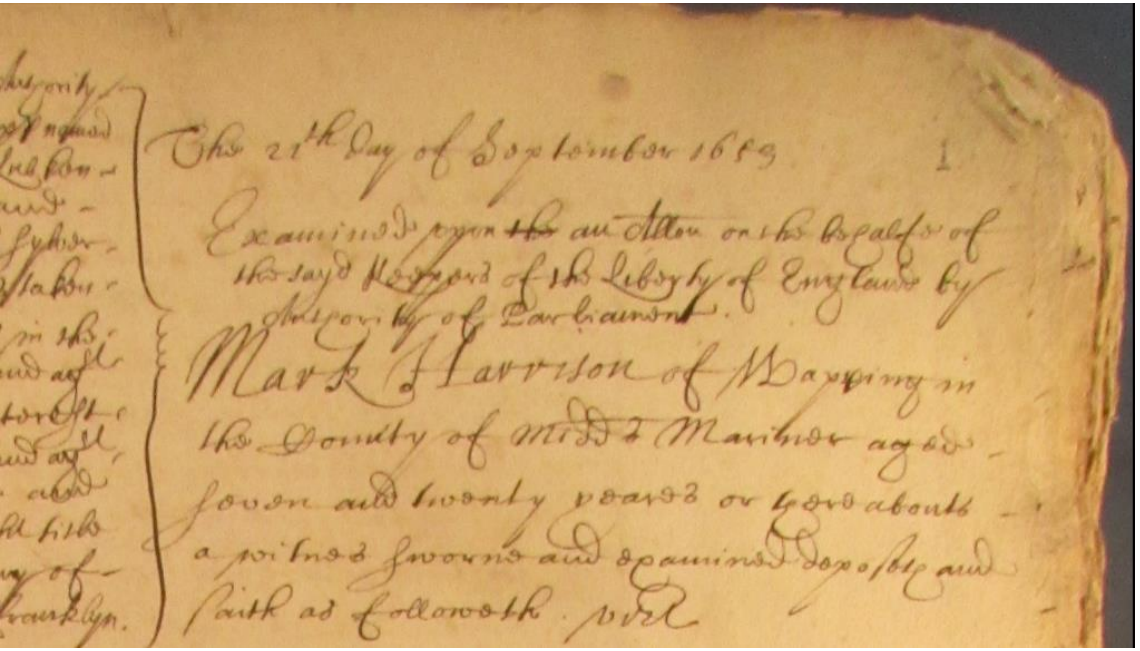
Source: Clockwise from top LH side: KaggleTestSnippet_HCA_1368_f.34v.PNG, KaggleTestSnippet_HCA_1370_f.366r.PNG, KaggleTestSnippet_HCA_1370_f.134r.PNG, KaggleTestSnippet_HCA_1368_f.58r.PNG

Machine based recognition of metadata



http://www.marinelives.org/wiki/HCA_13/68_f.1r_Annotate;
http://www.marinelives.org/wiki/Mark_Harrison

Speech to text recognition



Watson Speech to Text / Speech to Text Demo

Speech to Text

The IBM Watson Speech to Text service uses speech recognition capabilities to convert Arabic, English, Spanish, French, Brazilian Portuguese, Japanese, Korean, and Mandarin speech into text.

Get Started | API Reference | Documentation | Fork on GitHub | Start for free in IBM Cloud

Voice Model:

GB English broadband model (16KHz)

mark Harris[2] and of[4] what happened[7] in[2] the county of Middlesex mariner[8] aged seven and twenty years

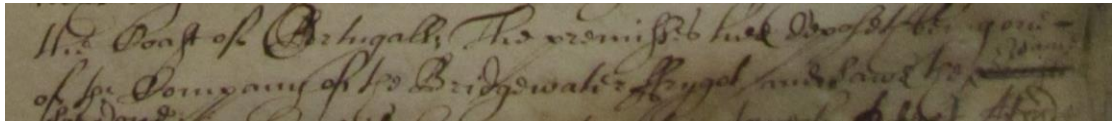
mark Harrison[3] of[2] walking[8] in[2] the county of Middlesex mariner[15] aged seven and twenty years or[2] there[4] about

mark[2] Harrison[3] of[2] what[4] happened in the county of Middlesex mariner[10] aged seven and twenty years or[4] there[4]

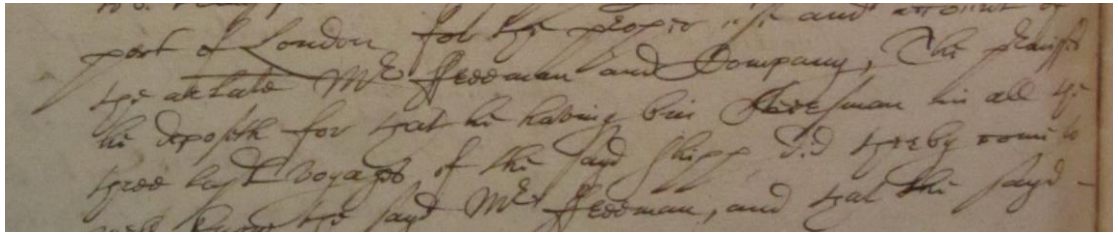
mark[2] Harrison[3] or[3] walking in the county of Middlesex mariner[8] aged[2] seven and twenty years[3] or[2] the[3] about[5]

Can we use key word spotting to excavate raw metadata?

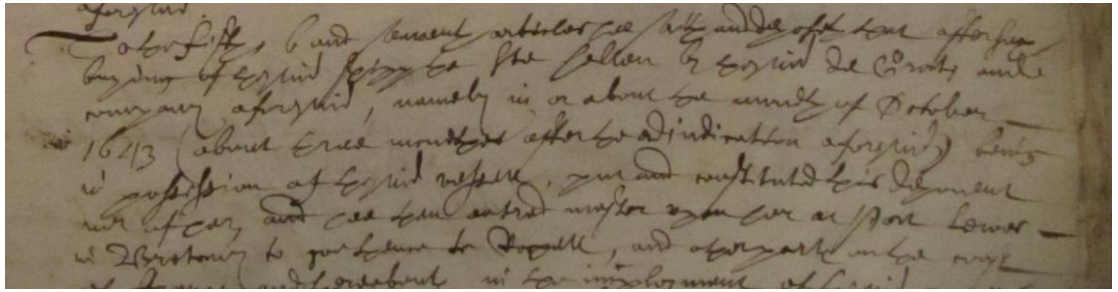
LANGUAGE DENOTING OCCUPATION



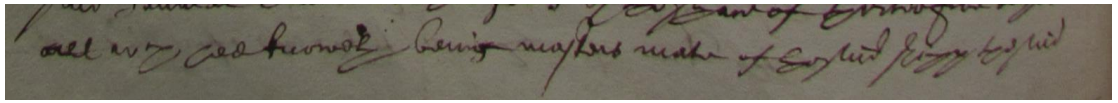
"The premisses hee deposeth being one of the company of the *Bridgewater ffrygott*, and sawe the same soe done" [HCA 13/72 f.90r] [CONCLUSION: One of the company]



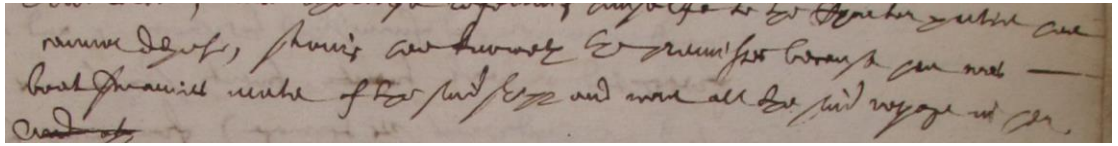
"The premisses he deposeth for that he the deponent was not onely for the voyage arlate wherein she was stranded, but in two former voyages stiersman of the sayd ship" [HCA 13/72 f.90v] [CONCLUSION: Steersman]



"after such buying of the said shipp the *Santa Hellen* by the said da [?Groots] and company aforesaid, namely in or about the moneth of October 1643 (about three monethes after the adiudication aforesaid) being in possession of the said vessell, put and constituted this deponent master of her, and hee then entred master upon her at Port Lewes in Bretany" [HCA 13/72 f.95r] [CONCLUSION: Master]



"all which hee knoweth being masters mate of the said shipp the said voyage" [HCA 13/70 f.669v] [CONCLUSION: Master's mate]



"hee knoweth the premisses because hee was boatswaines mate of the said shipp and went all the said voyage in her" [HCA 13/70 f.671r] [CONCLUSION: Boatswain's mate]

Can we refine raw machine generated metadata using a combination of NPL, controlled vocabularies, and programmable decision rules?

LANGUAGE DENOTING OCCUPATION

"The premisses hee deposeth being one of the company of the *Bridgewater ffrygott*, and sawe the same soe done" [HCA 13/72 f.90r] [CONCLUSION: One of the company]

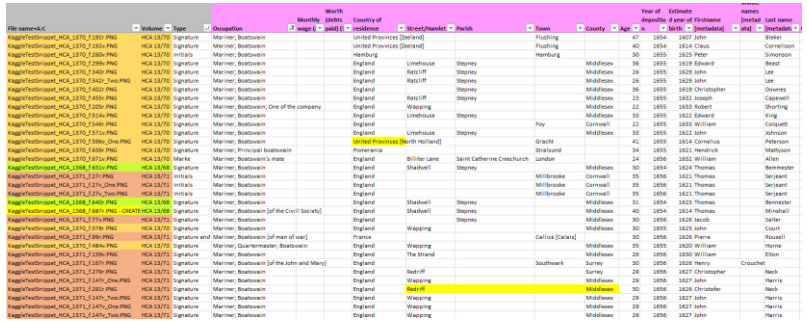
"The premisses he deposeth for that he the deponent was not onely for the voyage arlate wherein she was stranded, but in two former voyages stiersman of the sayd ship" [HCA 13/72 f.90v] [CONCLUSION: Steersman]

"after such buying of the said shipp the *Santa Hellen* by the said da [?Groots] and company aforesaid, namely in or about the moneth of October 1643 (about three monethes after the adiudication aforesaid) being in possession of the said vessell, put and constituted this deponent master of her, and hee then entred master upon her at Port Lewes in Bretany" [HCA 13/72 f.95r] [CONCLUSION: Master]

"all which hee knoweth being masters mate of the said shipp the said voyage" [HCA 13/70 f.669v] [CONCLUSION: Master's mate]

"the premisses because hee was boatswaines mate of the said shipp and went all the said voyage in her" [HCA 13/70 f.671r] [CONCLUSION: Boatswain's mate]

KaggleTestSnippet_HCA_1370_f.546r.PNG	HCA 13/70	Signature	Mariner; Boatswain	
KaggleTestSnippet_HCA_1370_f.571v.PNG	HCA 13/70	Signature	Mariner; Boatswain	
KaggleTestSnippet_HCA_1370_f.596v_One.PNG	HCA 13/70	Signature	Mariner; Boatswain	
KaggleTestSnippet_HCA_1370_f.636r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	
KaggleTestSnippet_HCA_1370_f.671v.PNG	HCA 13/70	Marke	Mariner; Boatswain's mate	
KaggleTestSnippet_HCA_1368_f.631v.PNG	HCA 13/68	Signature	Mariner; Boatswain	
KaggleTestSnippet_HCA_1371_f.27r.PNG	HCA 13/71	Initials	Mariner; Boatswain	
KaggleTestSnippet_HCA_1371_f.27v_One.PNG	HCA 13/71	Initials	Mariner; Boatswain	
KaggleTestSnippet_HCA_1371_f.27v_Two.PNG	HCA 13/71	Initials	Mariner; Boatswain	
KaggleTestSnippet_HCA_1368_f.640r.PNG	HCA 13/68	Signature	Mariner; Boatswain	
KaggleTestSnippet_HCA_1368_f.687r.PNG - CREATE	HCA 13/68	Signature	Mariner; Boatswain [of the Civill Society]	
KaggleTestSnippet_HCA_1371_f.77v.PNG	HCA 13/71	Signature	Mariner; Boatswain	
KaggleTestSnippet_HCA_1370_f.378r.PNG	HCA 13/70	Signature	Mariner; Boatswain	
KaggleTestSnippet_HCA_1371_f.99r.PNG	HCA 13/71	Signature and	Mariner; Boatswain [of man of war]	
KaggleTestSnippet_HCA_1370_f.484v.PNG	HCA 13/70	Signature	Mariner; Quartermaster; Boatswain	
KaggleTestSnippet_HCA_1371_f.139v.PNG	HCA 13/71	Signature	Mariner; Boatswain	
KaggleTestSnippet_HCA_1371_f.167r.PNG	HCA 13/71	Signature	Mariner; Boatswain [of the John and Mary]	
KaggleTestSnippet_HCA_1371_f.279r.PNG	HCA 13/71	Signature	Mariner; Boatswain	



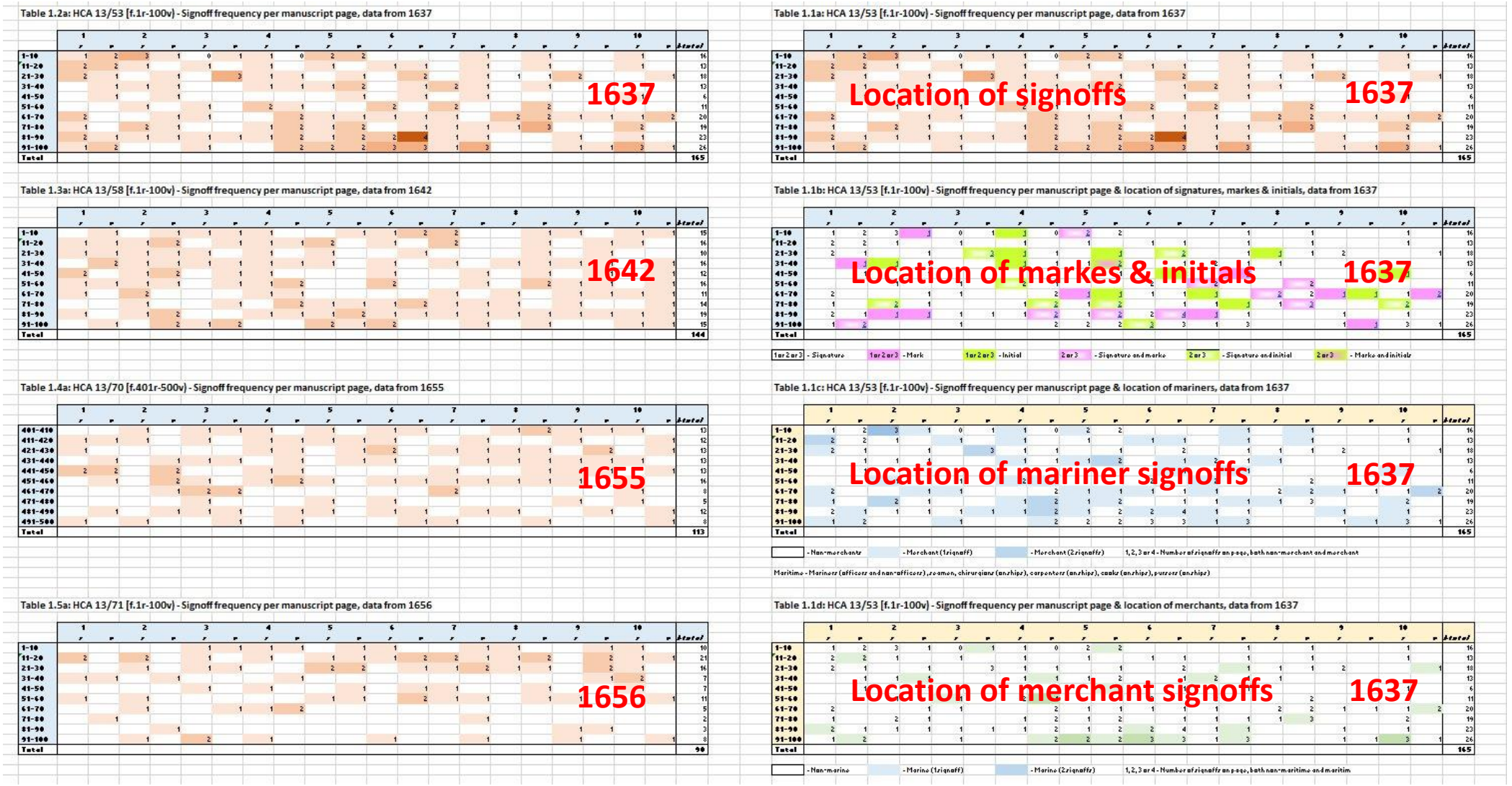
We need visual metadata, which can be machine processed

Table 1.2a EXPANDED: HCA 13/53 [f.1r-340v) - Signoff frequency per manuscript page, data from 1637

	1		2		3		4		5		6		7		8		9		10		
	r	*v*	*r*	*v*	*r*	*v*	*r*	*v*	*r*	*v*	*r*	*v*	*r*	*v*	*r*	*v*	*r*	*v*	*r*	*v*	*Subtotal*
1-10	1	2	3	1	0	1	1	0	2	2				1		1			1		16
11-20	2	2	1		1		1		1		1	1		1		1			1		13
21-30	2	1		1		3	1	1		1		2		1			2			1	16
31-40		1	1	1			1	1	1	2		1	2	1		1					13
41-50		1		1						1		1		1					1		6
51-60			1		1		2	1			2		2			2					11
61-70	2			1	1			2	1	1	1	1	1		2	2	1	1	1		18
71-80	1		2	1			1	2	1	2		1	1	1	1	3			2		19
81-90	2	1	1	1	1	1	1	2	1	2	2	4	1	1			1		1		23
91-100	1	2			1			2	2	2	3	3	1	3			1	1	3	1	26
101-110	2	1	2	2	1	1	1	2	2	1	1	1	1		2	1	2				23
111-120	1			1				1	1	2	1		2	1	2	2	1	1			16
121-130			1					2			1	1	2			3	1		1		12
131-140	2	3	2	1	1	2				1		1	1	1	2	2	1	2		1	23
141-150	1	1	2	1	2	2	1	2		1	2	1	1	1	1		2		1		22
151-160		1					2		1	1	2	1	2	2	1	1	2		1	1	18
161-170		1		2	2	1					1	2	1	1	2	1	1		2		17
171-180	1	2			2	1	1		1	1		1						1			11
181-190					2							3	1	2	1	4	4	2	1	1	21
191-200		1		1		1	1	1	1		1	1		1	1	2	1	2	2		17
201-210	2	2				1	1			2	4	3		1		2	1	2	1	2	24
211-220	1			2	1			1		1		1	4	1	2	3	4	2	2		25
221-230	2	2	1		3		1	2		1	1	1	1	2	2	2	2			2	25
231-240		1	1		1		2	1	1			3		2	2					1	15
241-250	2										2	1	1	1	2	2	1		2	1	15
251-260	2		2	2	1		1	1		1	1	1			1		1			1	15
261-270		1	1		1		1	1			1	1		1		1				2	11
271-280	2			1			1		1	1	1			1		2	1		1		12
281-290	1			1		2	1		1	1	1		1	1	1	2			1		14
291-300		1		1	1	1	1	2		1		1	1	1	1		1	1		1	15
301-310		1		2						2	1		2	1	1		1			1	12
311-320			1					1						1	2	1					6
321-330				1					1				1					1	3		7
331-340	1	2	2	2				2		1	1	1	1	1	1	1	1		1		18
Total	31	30	24	27	23	17	23	30	19	31	31	39	31	33	30	42	33	16	29	16	**555**

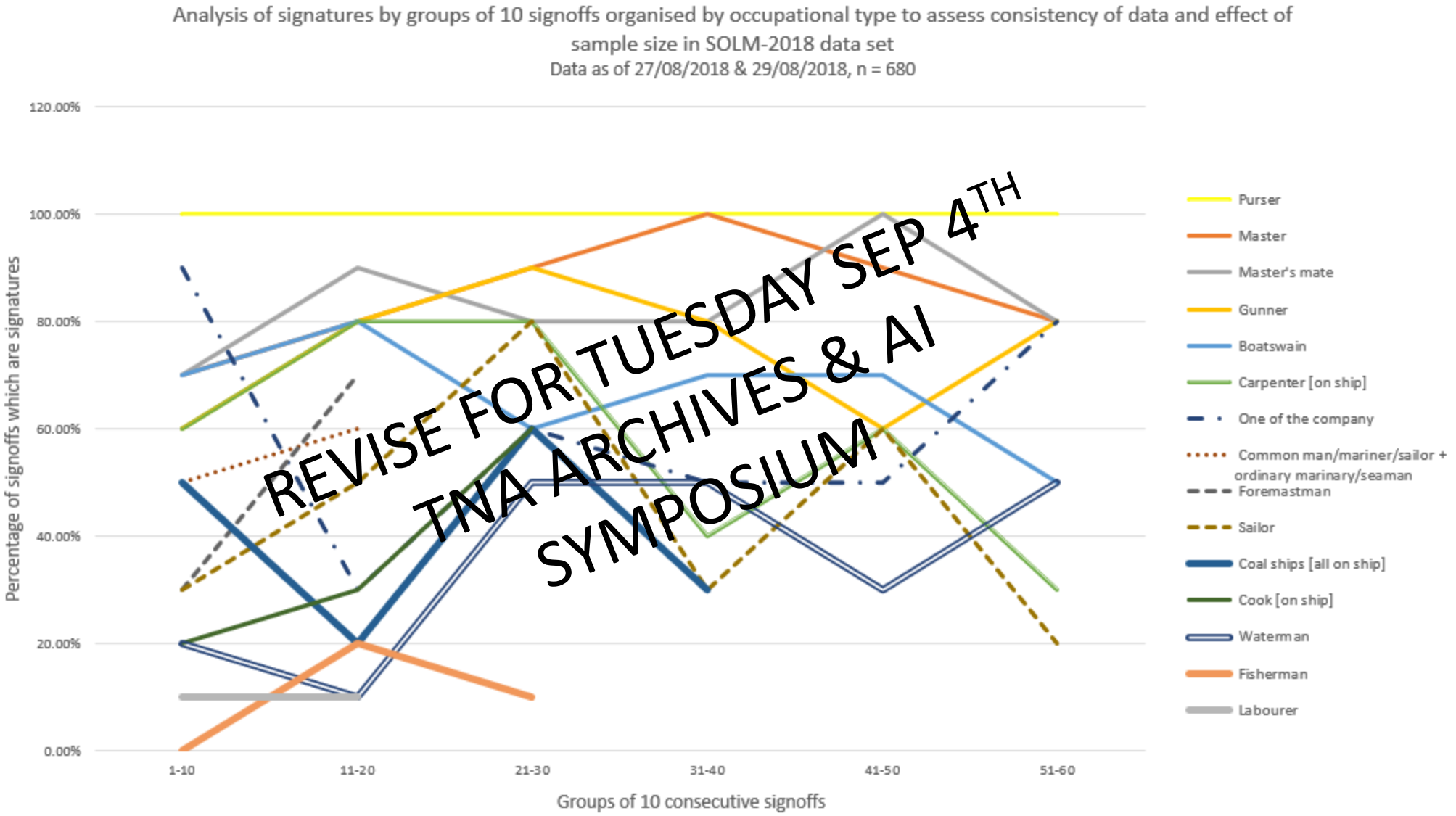
Source: SOLM-2018 database

Archivists, computer scientists and users of all sorts need to work together



Source: SOLM-2018 database

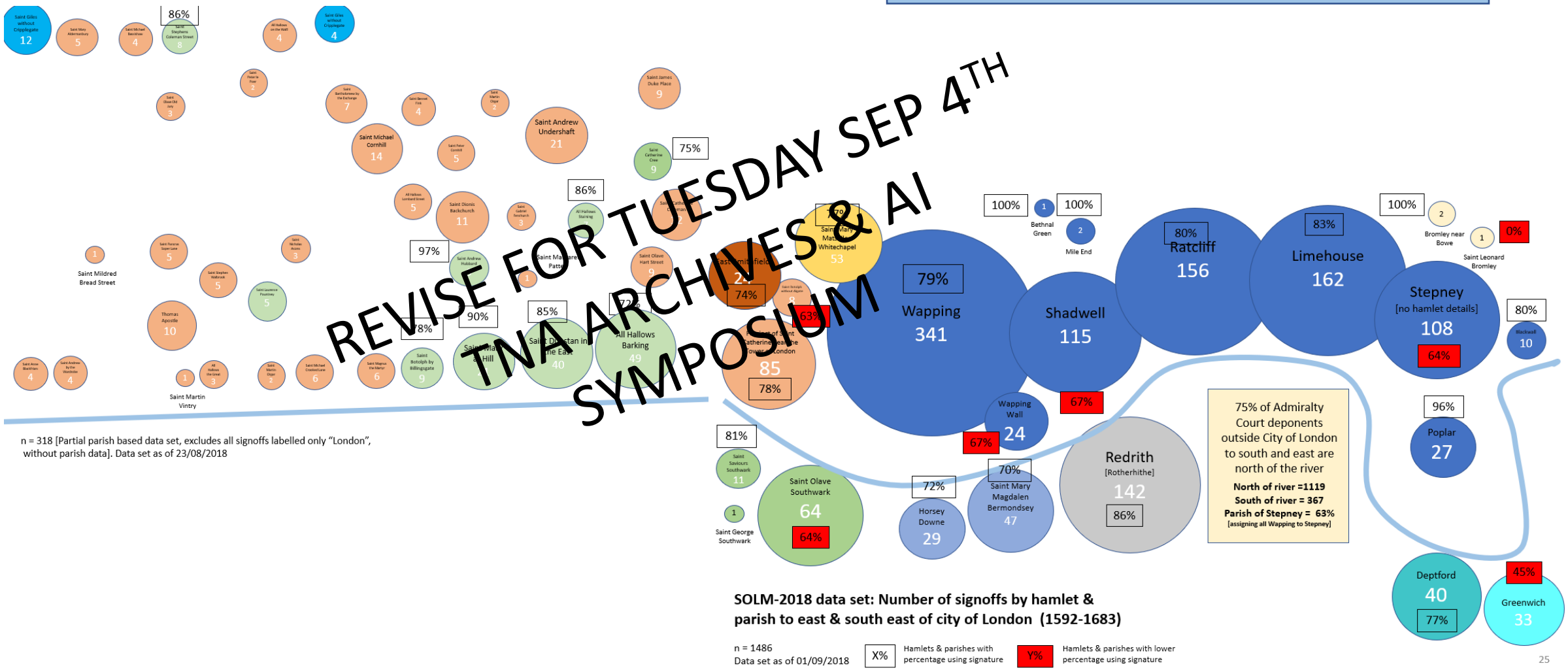
Some early results



Source: SOLM-2018 database

Some early results

Early/mid-C17th London – a linear maritime city, as seen in the location of High Court of Admiralty deponents, 1637 to 1667



n = 318 [Partial parish based data set, excludes all signoffs labelled only "London", without parish data]. Data set as of 23/08/2018

REVISE FOR TUESDAY SEP 4TH
TNA ARCHIVES & AI SYMPOSIUM

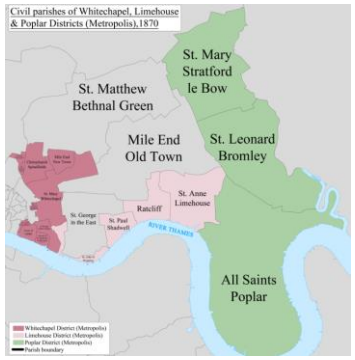
Source: SOLM-2018 database

100%
1
Bethnal Green
100%
2
Mile End
77%
Saint Mary Matsellon Whitechapel
53
East Smithfield
24
74%
Saint Botolph without Algate
8
63%
79%
Wapping
341
Shadwell
115
80%
Ratcliff
156
83%
Limehouse
162
100%
2
Bromley near Bowe
1
Saint Leonard Bromley
0%
Stepney
[no hamlet details]
108
64%
80%
Blackwall
10
Precinct of Saint Catherine near the Tower of London
85
78%
Wapping Wall
24
67%
67%
Redrith
[Rotherhithe]
142
86%
70%
72%
Saint Mary Magdalen Bermondsey
47
Horsey Downe
29
81%
Saint Saviours Southwark
11
1
Saint George Southwark
Saint Olave Southwark
64
64%
96%
Poplar
27
Deptford
40
77%
45%
Greenwich
33

REVISE FOR TUESDAY SEP 4TH
TNA ARCHIVES & AI SYMPOSIUM

75% of Admiralty Court deponents outside City of London to south and east are north of the river

North of river =1119
South of river = 367
Parish of Stepney = 63%
[assigning all Wapping to Stepney]



SOLM-2018 data set: Number of signoffs by hamlet & parish to east & south east of city of London (1592-1683)

Source: SOLM database
n = 1486
Data set as of 01/09/2018

X% Hamlets & parishes with percentage using signature

Y% Hamlets & parishes with lower percentage using signature

Some early results

Contact details

Colin Greenstreet
Community organiser,
Signs of Literacy

Dr Mark Hailwood
Lecturer in History, 1400-1700,
University of Bristol

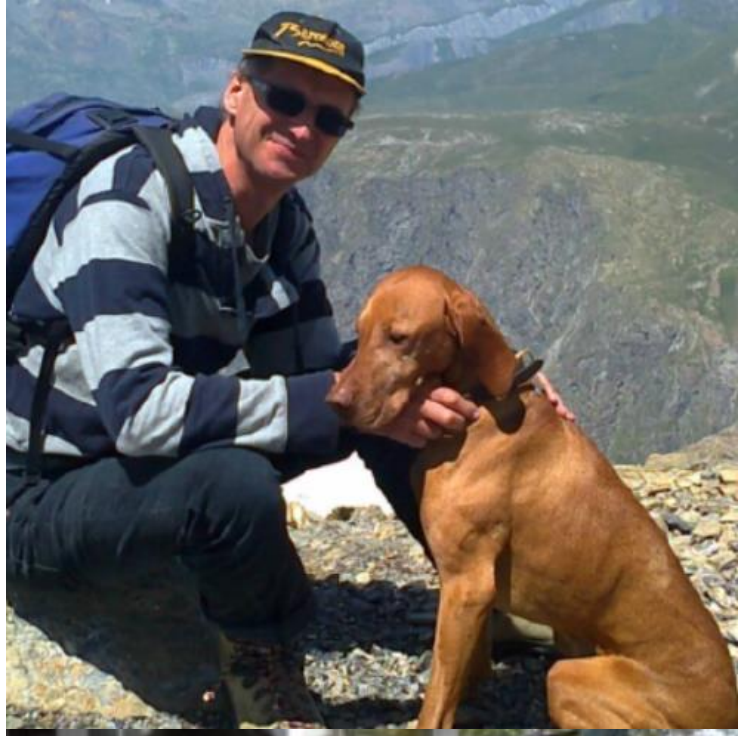
Email:
colin.greenstreet@gmail.com
m.hailwood@bristol.ac.uk

Weblinks:
http://signsofliteracy.org
http://marinelives.org
http://chronoscopic.org

GitHub:
https://github/Signsofliteracy/Signoff

Twitter:
Marinelivesorg

Working with: The National Archives, kaggle Competitions, PICTURAE



Discussion

Archives and AI symposium
SOLM-2018
Supplementary material