

DRAFT FOR REVIEW

SOLM-2018 data set

Archives & AI

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

Some perspective

Labeled Faces in the Wild

UNIVERSITY OF MASSACHUSETTS AMHERST, MASS.

Labeled Faces in the Wild Home



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 The aligned images include "funneled images" (ICCV 2007), LFW-a, which uses an unpublished method of alignment, and "deep funneled" images (NIPS 2012).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.

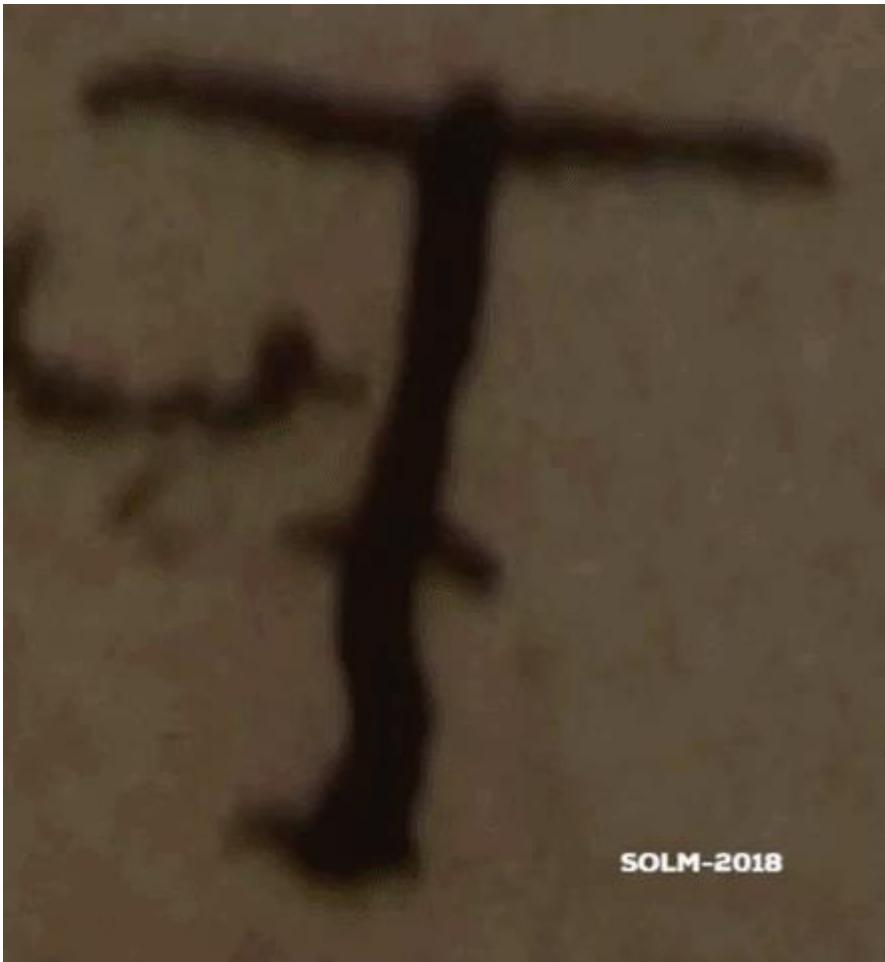
Abstract In 2007, Labeled Faces in the Wild was released in an effort to spur research in face recognition, specifically for the problem of face verification with unconstrained images. Since that time, more than 50 papers have been published that improve upon this benchmark in some respect. A remarkably 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

Pattern seeking

How many different letters can you recognise?



Click for animated GIF

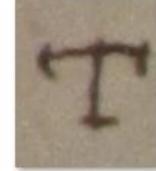
Initials – Ts and Js



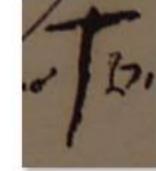
T6.png



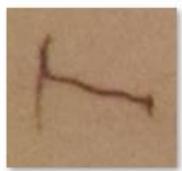
T7.png



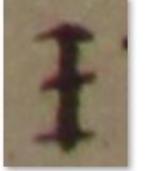
T8.png



T9.png



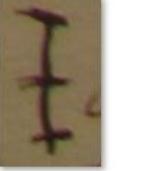
T10.png



J5.PNG



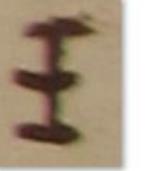
J6.PNG



J7.PNG



J8.PNG



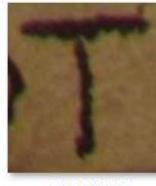
J9.PNG



T11.PNG



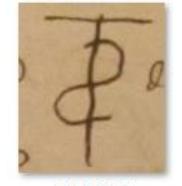
T12.PNG



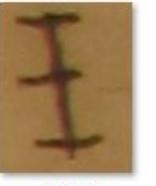
T13.PNG



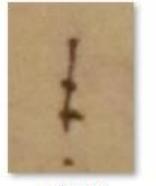
T14.PNG



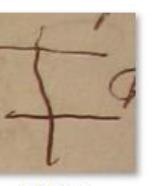
T15.PNG



J10.PNG



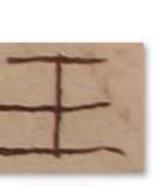
J11.PNG



J12.PNG



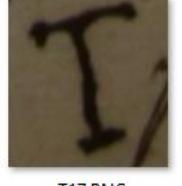
J13.PNG



J14.PNG



T16.PNG



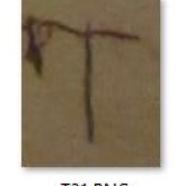
T17.PNG



T18.PNG



T20.PNG



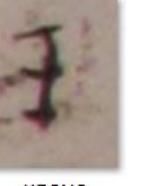
T21.PNG



J15.PNG



J16.PNG



J17.PNG



J18.PNG



J19.PNG



T22.PNG



T23.PNG



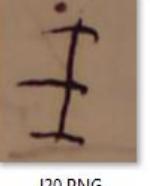
T24.PNG



T25.PNG



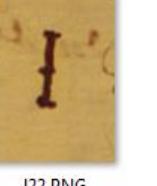
T26.PNG



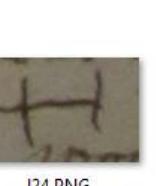
J20.PNG



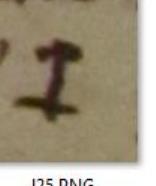
J21.PNG



J22.PNG



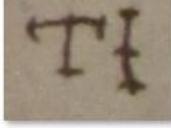
J24.PNG



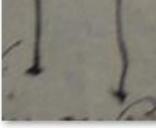
J25.PNG



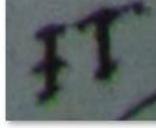
T28.PNG



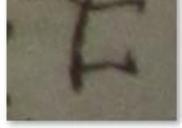
TJ28.PNG



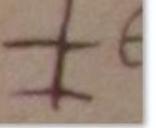
TJ30.PNG



TJ31.PNG



TL29.PNG



J26.PNG



J27.PNG



J28.PNG



J30.PNG



J31.PNG

SOLM-2018 database

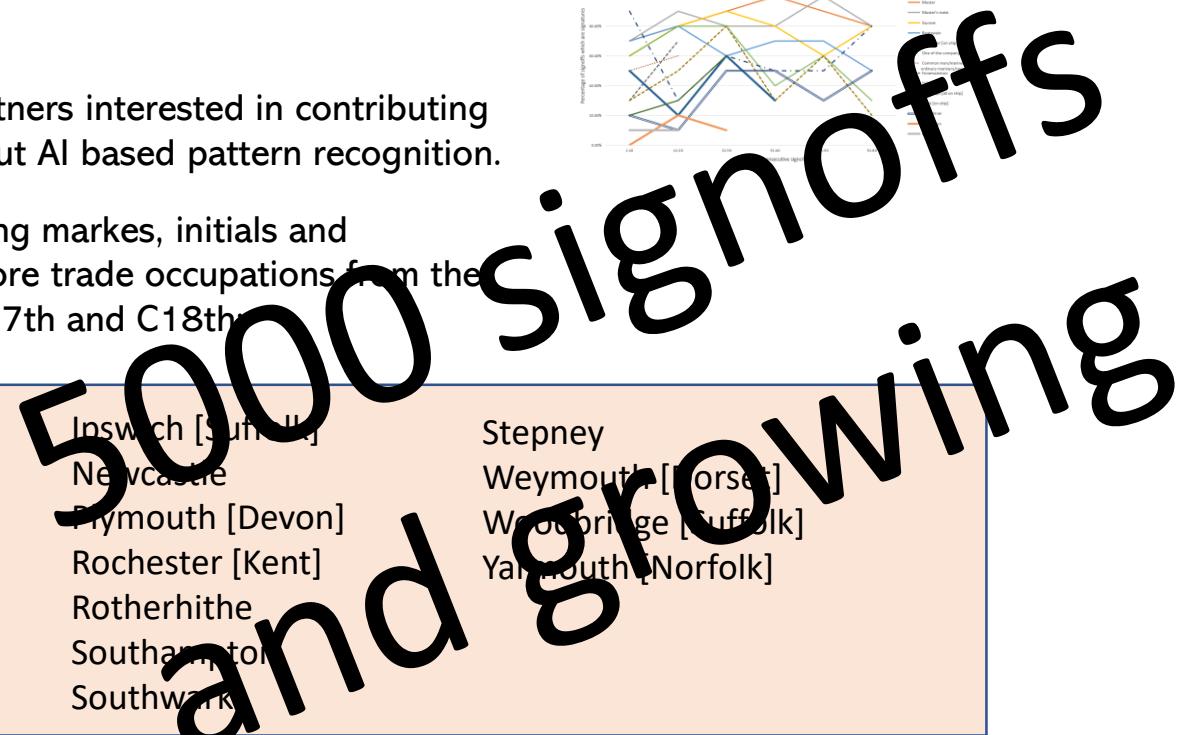
The **SOLM-2018 database** is a tool for historians and computer scientists to work with marks, initials and signatures. It has been designed to support the exploration of historical literacy and the development of tools for automatic metadata creation.

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.

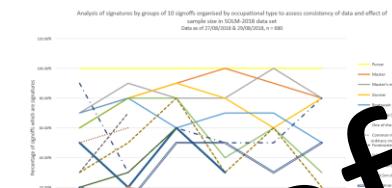
We are looking for UK and international archival partners interested in contributing content to the SOLM-2018 tool and in learning about AI based pattern recognition.

We are especially interested in manuscripts containing marks, 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] |
| Barnstaple [Devon] | Falmouth [Devon] |
| Bermondsey | Faversham [Kent] |
| Bristol | Foy [Cornwall] |
| Colchester [Essex] | Greenwich |
| Dartmouth [Devon] | Harwich [Essex] |
| Deptford | Hull |



SOLM-2018 data set



| | | | |
|---------------------|------------------|-------------------|----------------------|
| 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 | |

500 and growing

Our vision is a SOLM-2023 database with 1 million marks, 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!!!!

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

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

5000 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

Kaggle Competitions

Bristol Archives
 Home to ten centuries of history: we collect + preserve Bristol's archives (and the British Empire & Commonwealth Collection) for current + future generations.
 @BristolArchives Follows you
 Bristol, United Kingdom
bristolmuseums.org.uk/bris
 Joined April 2011

The National Archives

THE HUNTINGTON

SOUTH WEST HERITAGE TRUST

Devon Archives
 Tweets from the team at the South West Heritage Trust about Devon's fascinating archive collection. #SWHTdiscovery
 Exeter
swheritage.org.uk/#archives/cmcl
 Joined January 2012

Stanford | Text Technologies
 STANFORD TEXT TECHNOLOGIES IS AN INTERDISCIPLINARY ENTERPRISE COMBINING BOOK HISTORICAL APPROACHES WITH DIGITAL METHODS AND TOOLS TO INVESTIGATE THE LONG HISTORY OF HUMAN COMMUNICATION FROM THE EARLIEST TIMES TO THE PRESENT DAY. [FIND OUT MORE](#)
 HOME ABOUT NEWS PUBLICATIONS RESEARCH PEOPLE COLLEGIUM
 Geoffrey Chaucer
 Westminster Abbey
 Essex Record Office ARCHIVE EXPLORER
 Essex Record Office @essexarchive
 The storehouse of Essex history
 Chelmsford, Essex
essexrecordoffice.co.uk
 Joined February 2009

Dorset History Centre
 Dorset History Centre collects & preserves archives & local studies for Bournemouth, Dorset & Poole for all to enjoy. Use policy d4u.org.uk/jjkVK
 Dorchester, England
[dorsetforyou.gov.uk/libraries-history...](http://dorsetforyou.gov.uk/libraries-history/)
 Joined July 2015

Tyne & Wear Archives & Museums

TWAM Museums
 Regional museum, art gallery and archives service managing Tyneside and the Wear. Tweets by [@TWAMmuseums](#)
 Tyne and Wear
 Hull History Centre
 News, tips and events from Hull's home page featuring the Hull archives, Hull City Local Studies Library, Hullshire, UK, hullhistorynews.co.uk, What's On 2009

Norfolk Record Office
 Norfolk Record Office @NorfolkRO
 Situated At The Archive Centre, Martineau Lane, with staff also based at Norfolk Heritage Centre (@NorfolkHC) and King's Lynn Borough Archive.
 Norwich, Norfolk

Southampton Council
 News and updates from Southampton City Council. Need to do something? Most tasks can be completed on our website: southampton.gov.uk
 Southampton, UK
southampton.gov.uk
 Joined February 2009

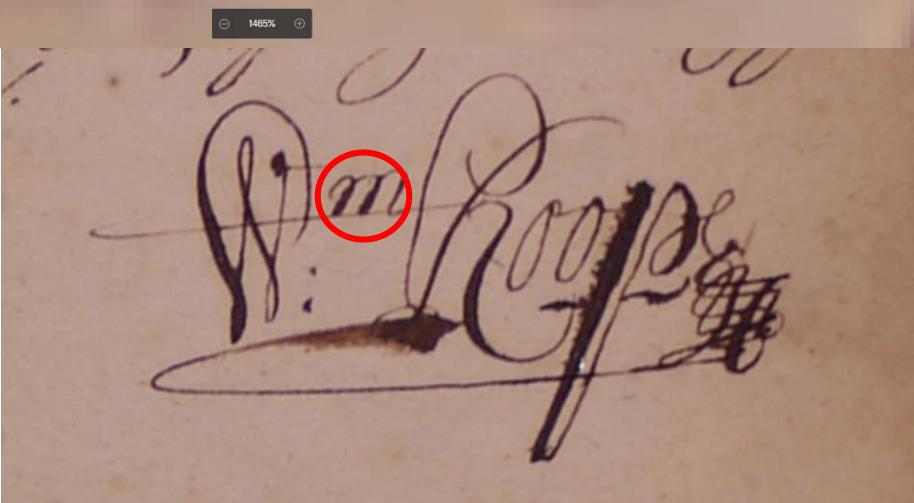
Kent County Council
 Kent County Council kent.gov.uk
 Kent Archives @kent_archives
 Get involved and keep up-to-date with Kent's Archive and Local History service. This account is monitored from 8:30am - 5pm Monday to Friday.
 Maidstone, South East
kent.gov.uk/archives
 Joined March 2017

Suffolk Archives
 Suffolk County Council's Record Office. Follow for archival news, events, updates on collections and more! Discover the treasures of 900 years of Suffolk's past
 Suffolk, UK
suffolkarchives.co.uk
 Joined February 2015

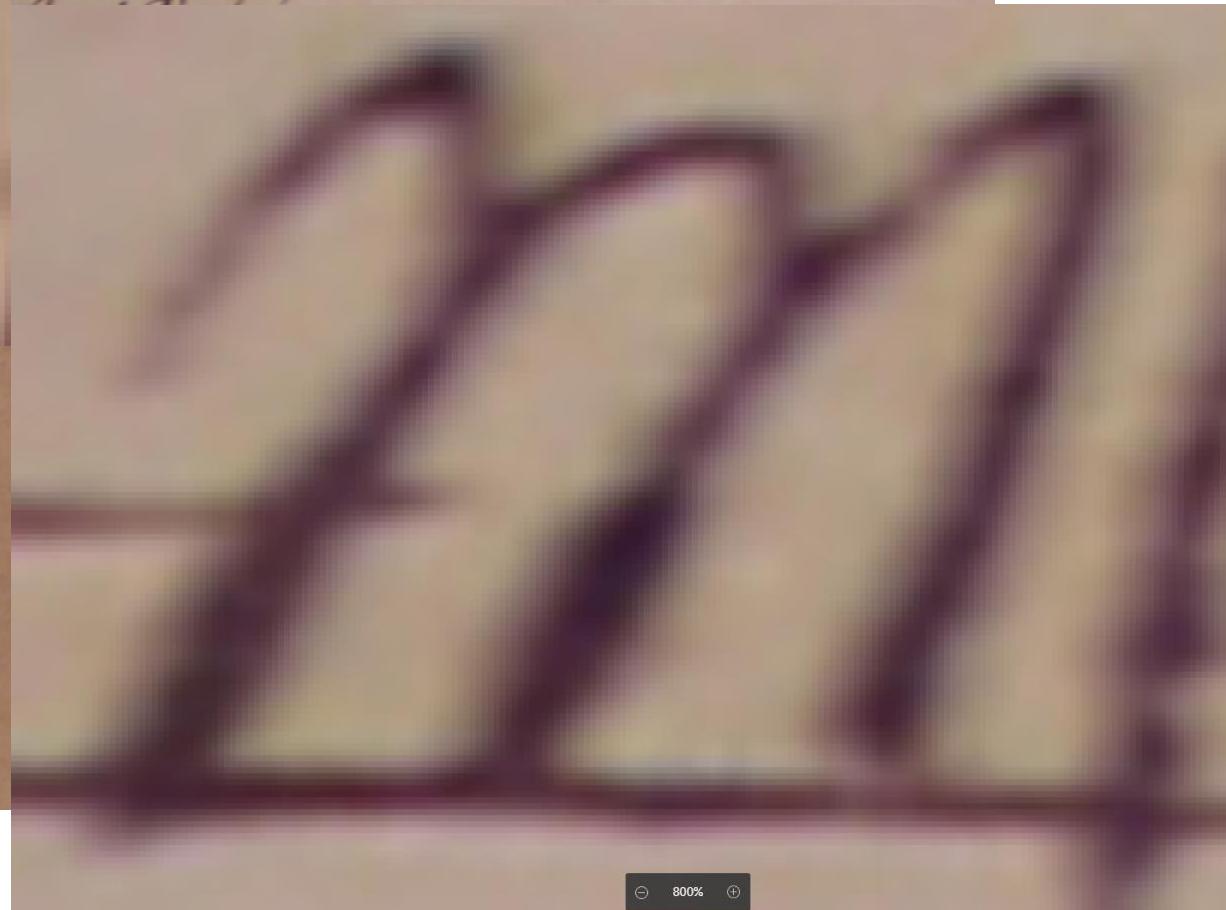
PICTURAE
 LET'S UNLOCK OUR HERITAGE TO THE WORLD.
 Gemeente Amsterdam
 Stadsarchief

Alle Amsterdamse Akten
 DE BESTE VERHALEN UIT HET ARCHIEF VAN DE AMSTERDAMSE NOTARISSEN

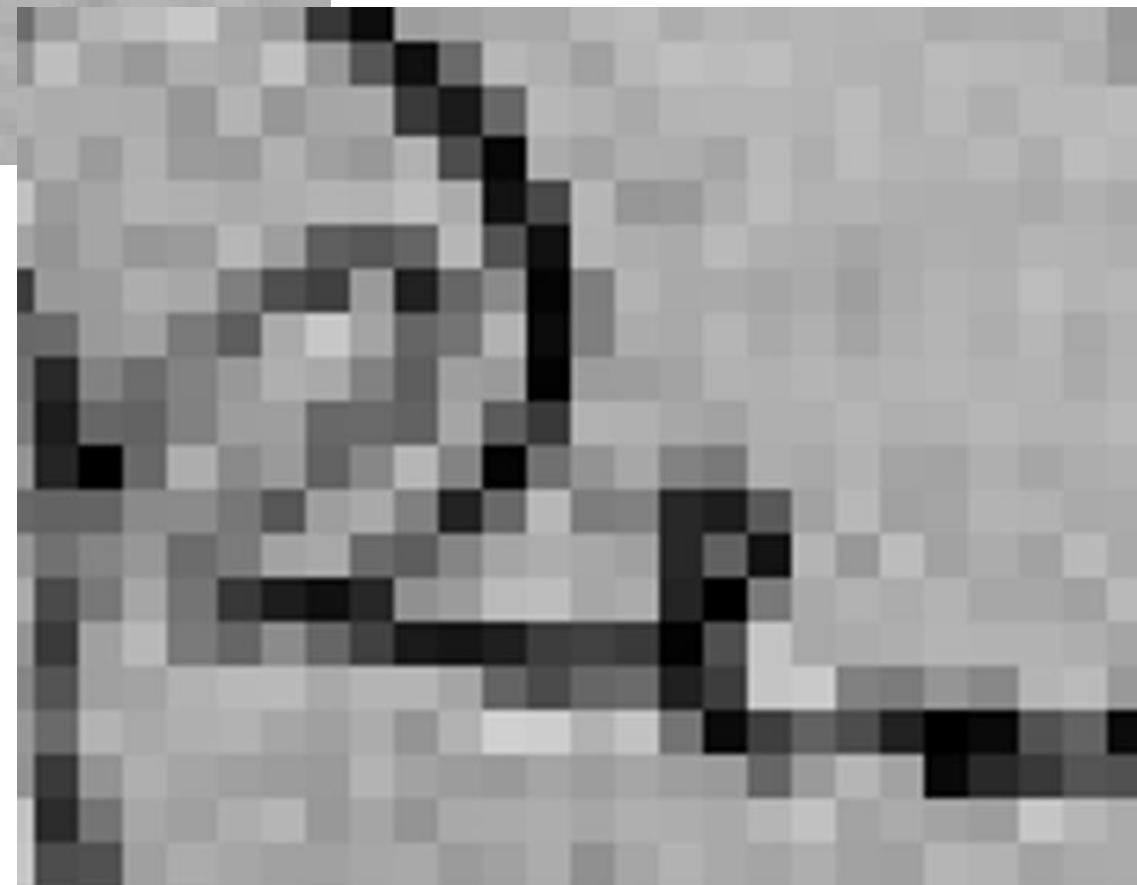
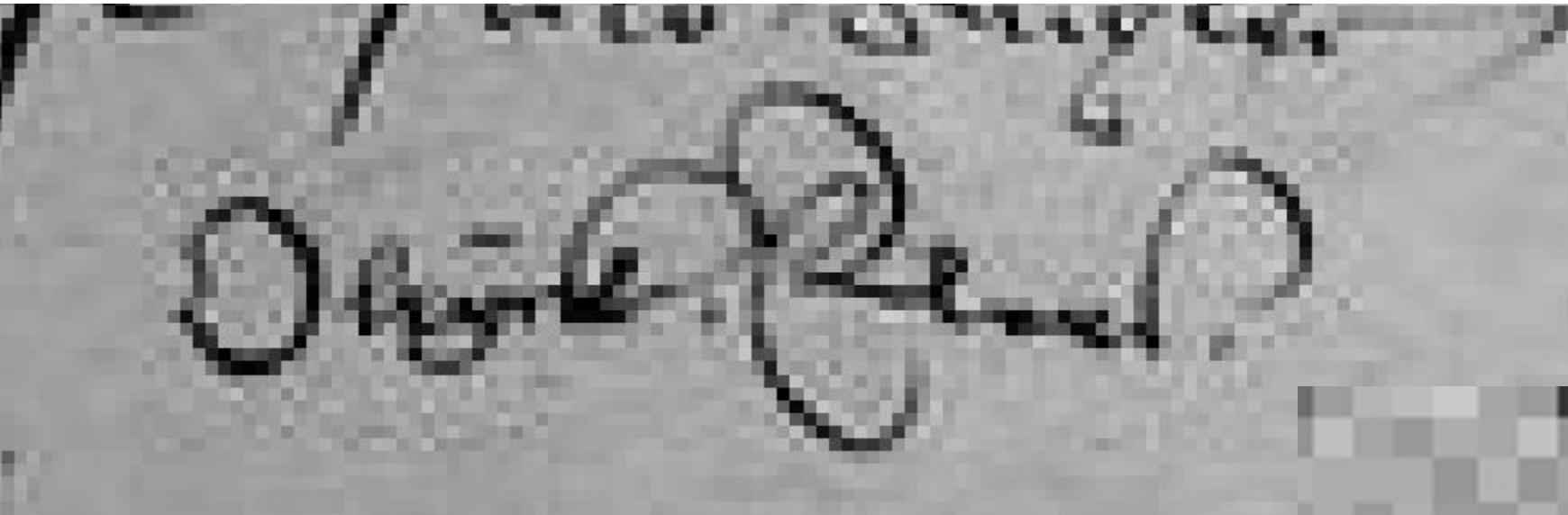
High pixel definition



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



Low pixel definition



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 | |

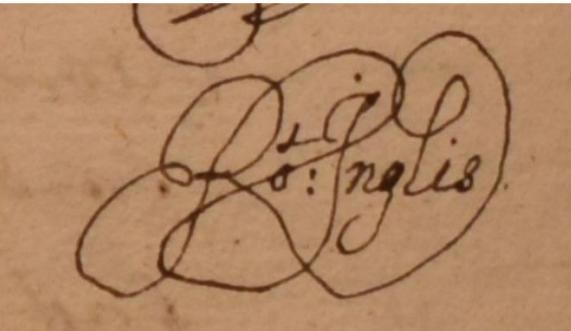
File to upload: Choose File | No file chosen

Number of colors:

delta:
(1-255)

Reduce Brightness: Yes No

Reduce gradient: Yes No



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

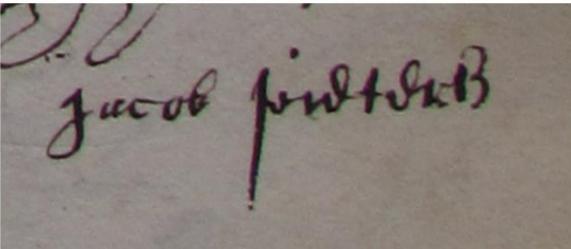
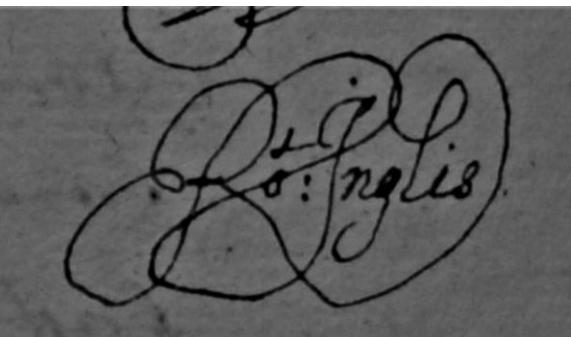
File to upload: Choose File | No file chosen

Number of colors:

delta:
(1-255)

Reduce Brightness: Yes No

Reduce gradient: Yes No



| Color | Color Code | Percentage |
|---------|------------|------------|
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| #604040 | 0.030729 | |

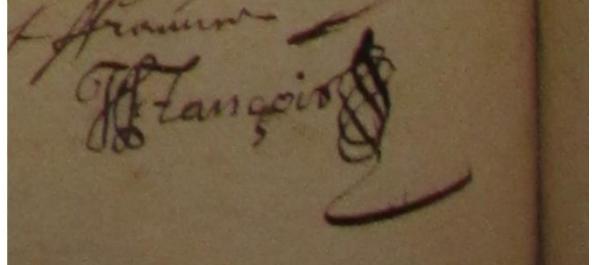
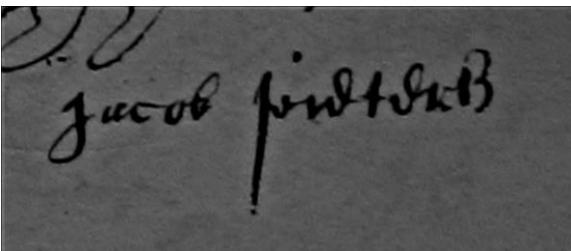
File to upload: Choose File | No file chosen

Number of colors:

delta:
(1-255)

Reduce Brightness: Yes No

Reduce gradient: Yes No



| Color | Color Code | Percentage |
|---------|------------|------------|
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| #604020 | 0.125143 | |
| #402020 | 0.062000 | |
| #202000 | 0.006095 | |

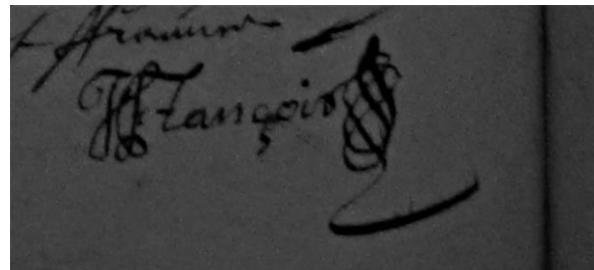
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Number of colors:

delta:
(1-255)

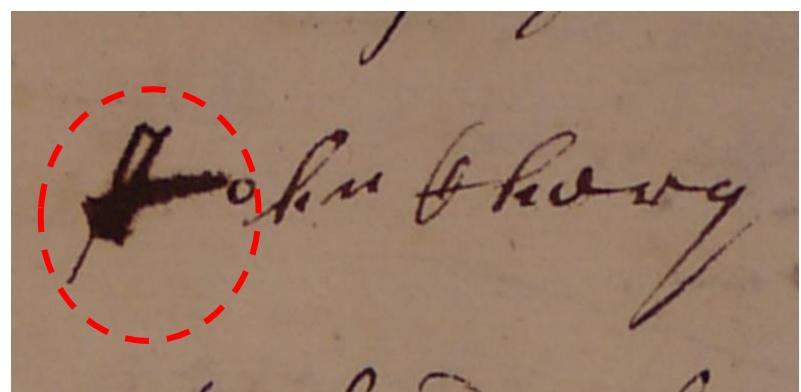
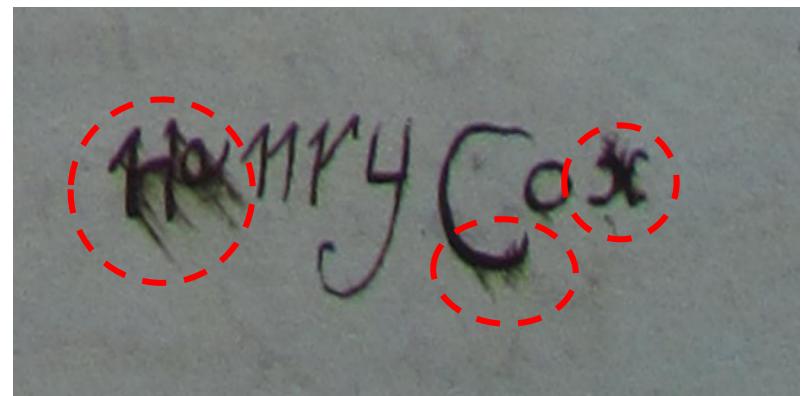
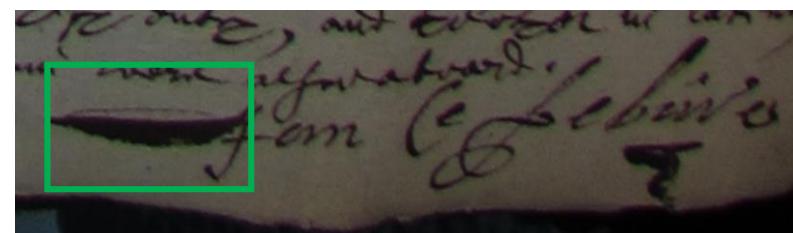
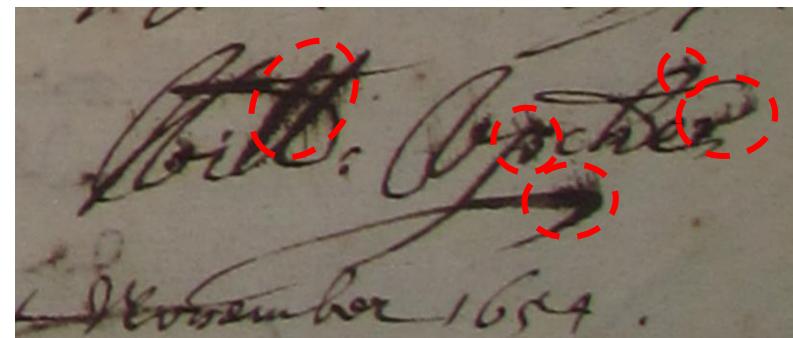
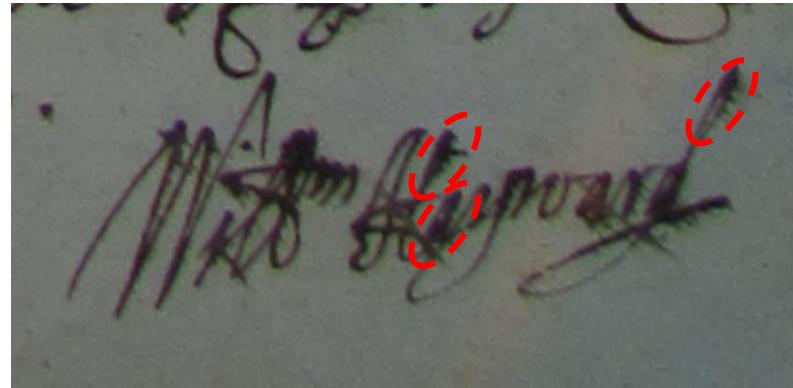
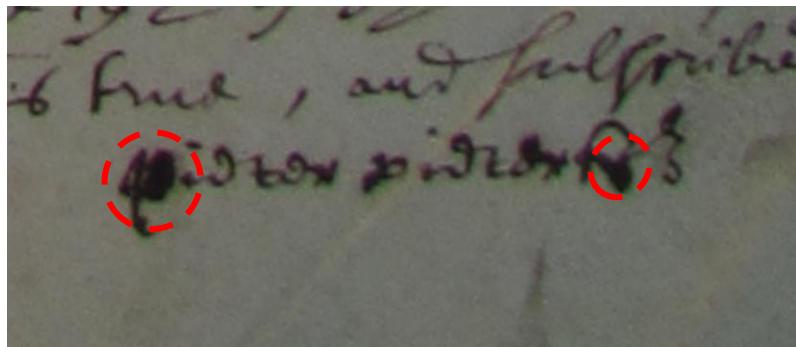
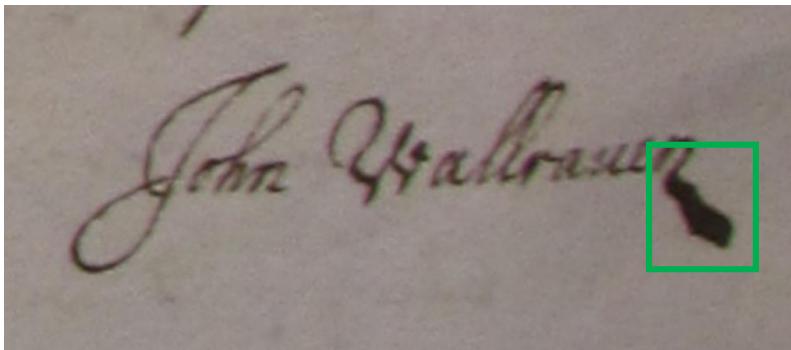
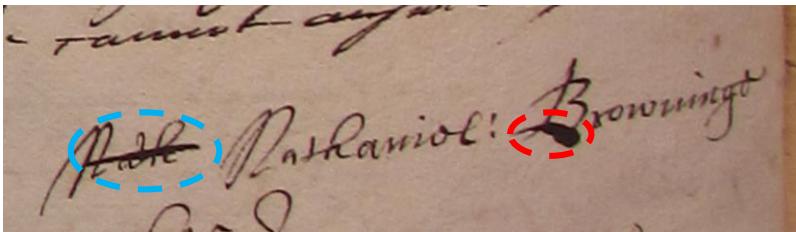
Reduce Brightness: Yes No

Reduce gradient: Yes No



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



Ink blots or smudges



Stylistic feature or smudge?

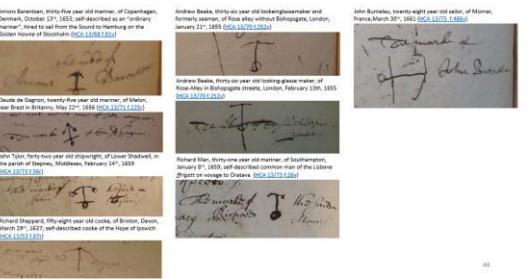


Deletion

Source: Clockwise from top LH side:
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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,

SOLM-2018 IIIF anchors manifest in Mirador viewer

Anchors



44

HCA Depositions: Anchors

The main image shows a close-up of an anchor marking on a piece of paper. Navigation arrows are visible on the left and right sides. Below the main image, five smaller images show other anchor markings, each with a name label underneath. The central image has a blue border around its anchor marking.

Richard Shepperd

Andrew Beake (2)

Andrew Beake (1)

John Tylor

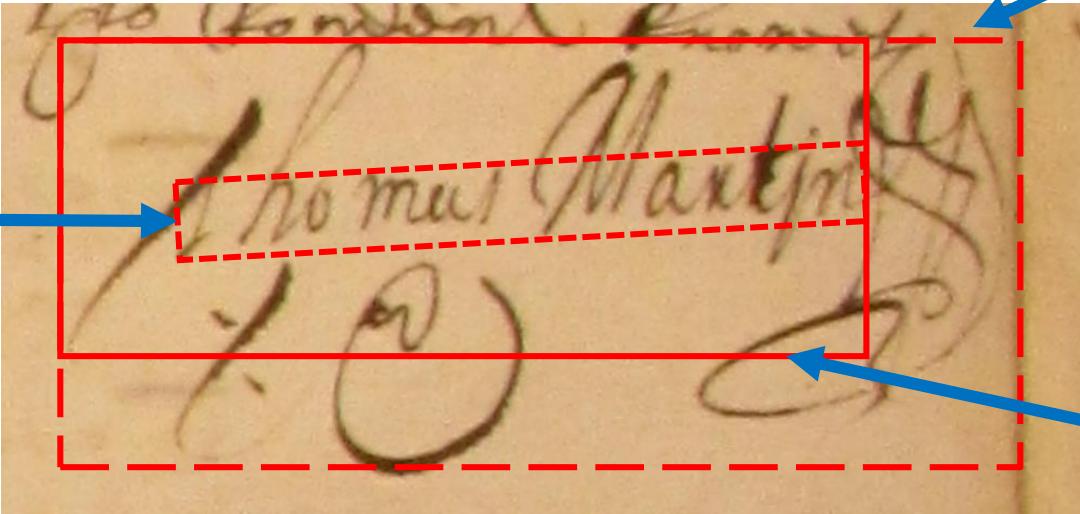
John Burnelau

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

Inside boundary box,
excluding uppers and
downers

Outside boundary
box, including
flourish



Middle boundary
box, including all
letters, but excluding
flourish

Statistics

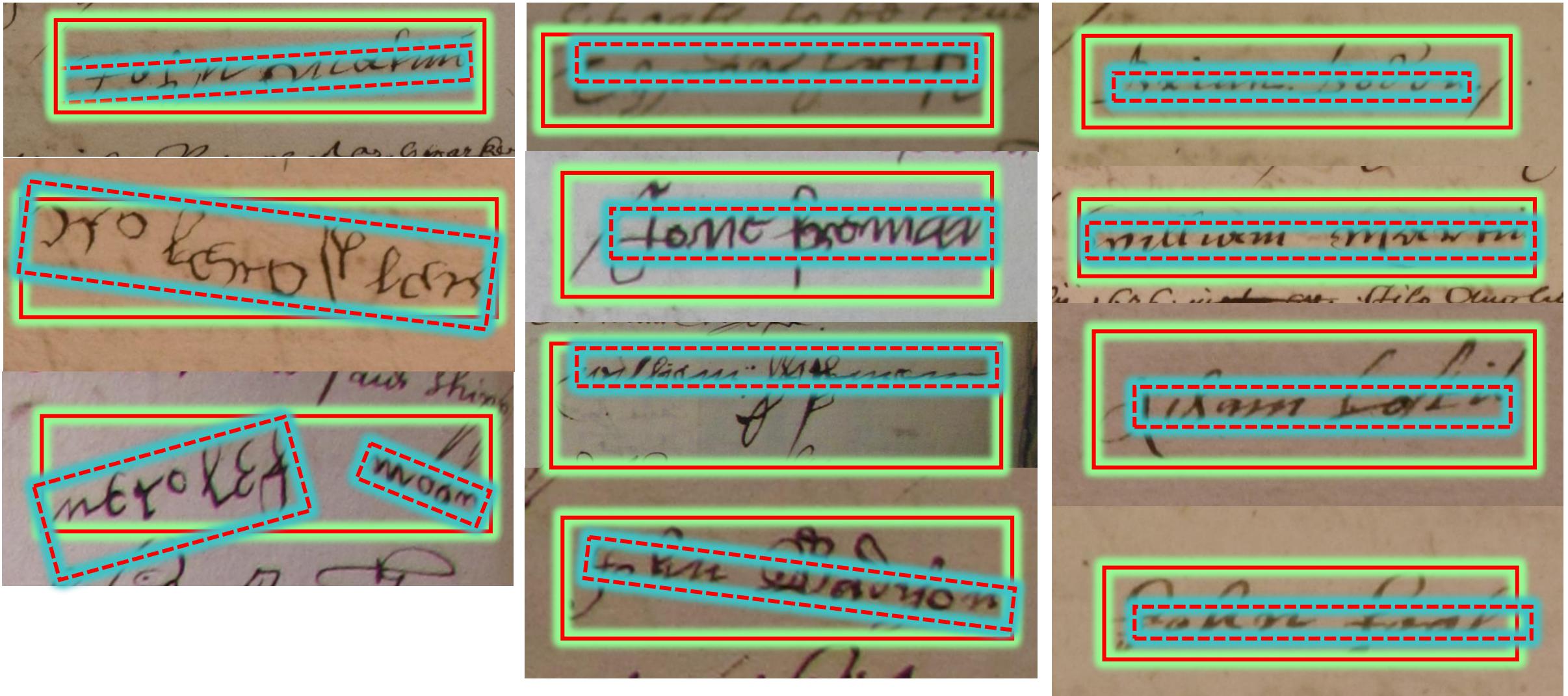
Inside boundary box: 9.0 x 1.1

Middle boundary box: 9.75 x 4.25

Outside boundary box: 12.75 x 5.75

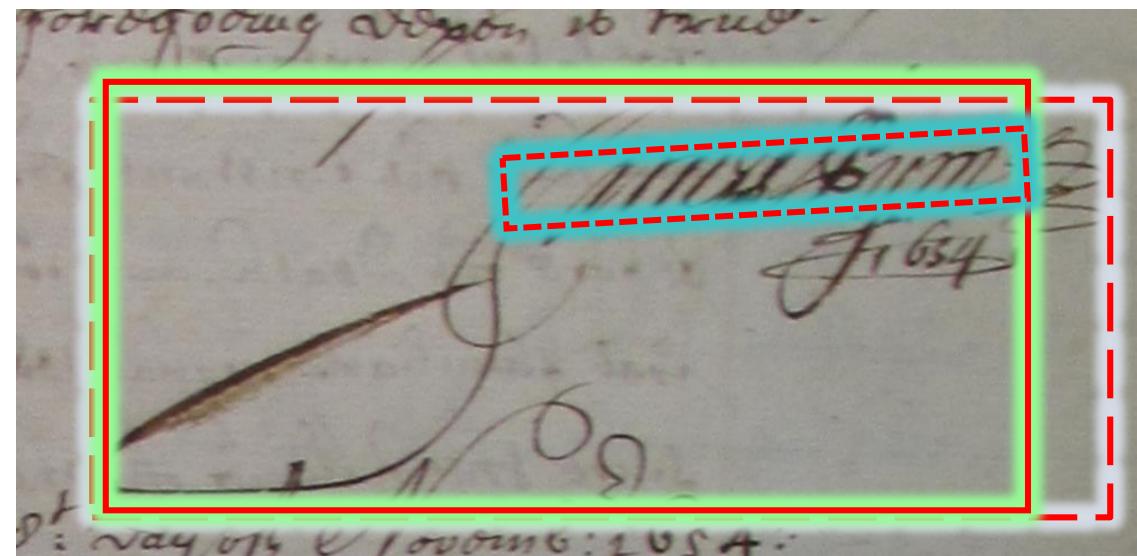
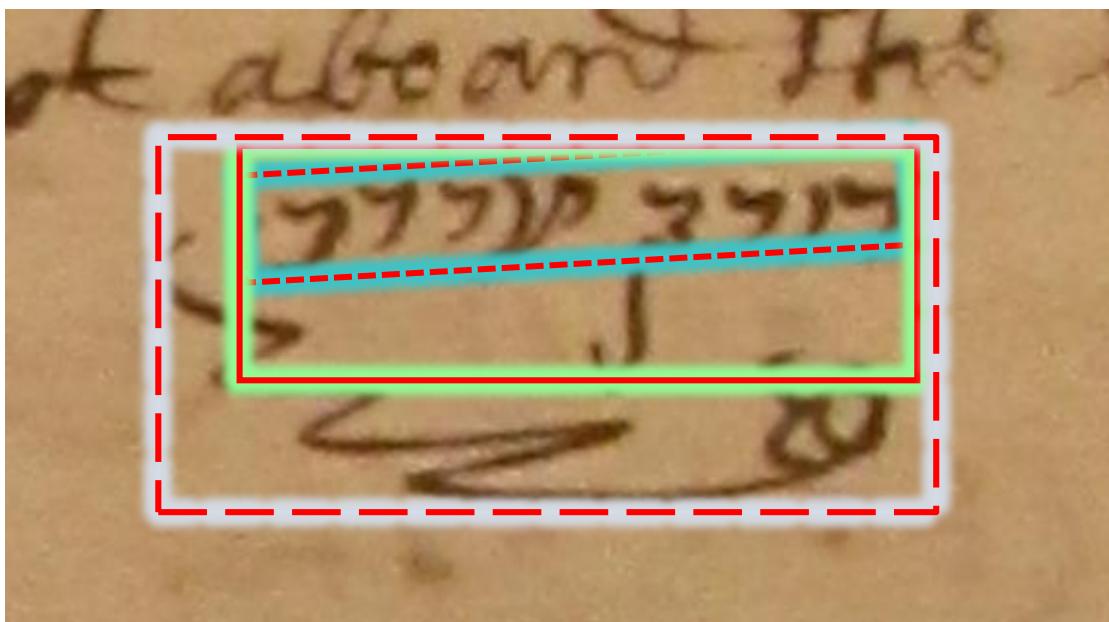
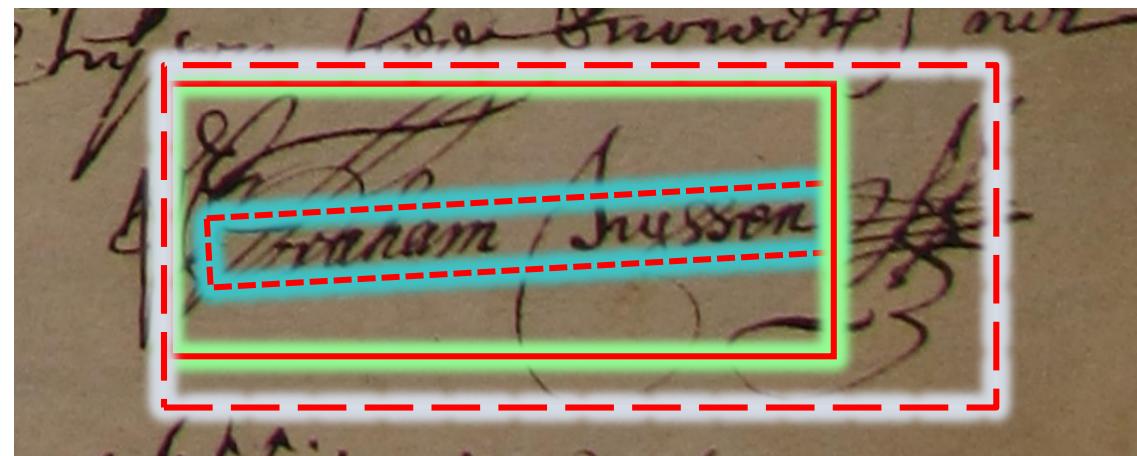
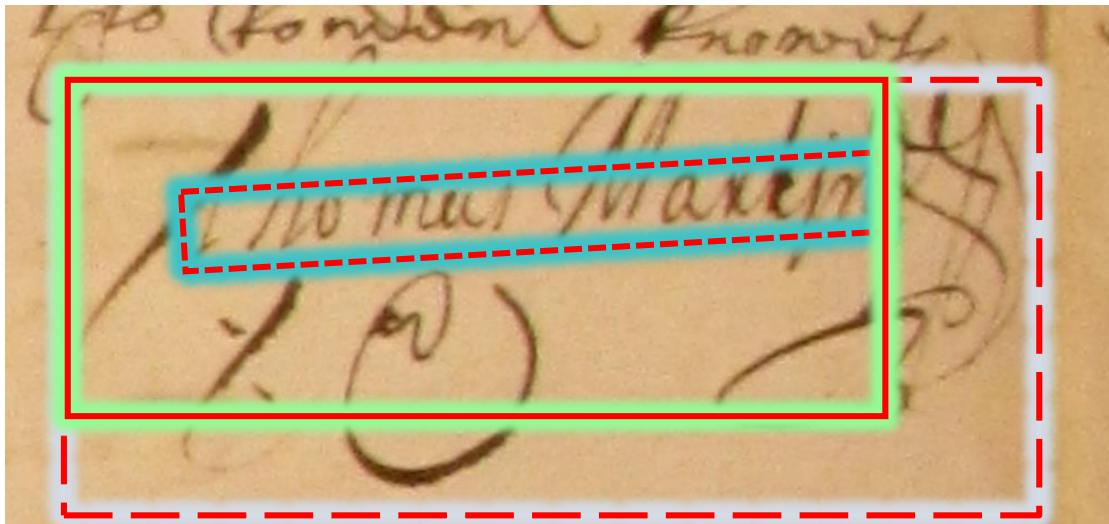
Rotation from horizontal: ca. 340 degrees

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

The 21st Day of September 1693

Examined upon the 21st day of September 1693 before me by
John Hales Esq; a Notary Publick for the County of Lancashire
and the City of Lancaster by
Mark Harrison of Waddington in
the County of Middle Lancashire aged
fifty and twenty years or thereabouts
a married man and a master
of a small farm and a man of moderate
means.

Q. In the first article of the said warrant the day and year before
the aforesaid Sheriff the following Starre or Morning Starre and his
labor and service as a common shipp in the usual course of his commonal-
in the Longish field upon the Coast of England, and his first Captain
he aforesaid being the Stevenglass Captain whose of East Middle more Lancashire
and some of his crew followed and taken by the said shipp and another shipp
named the Master Name whereof Peter Shadley Abbott was Commandor
and forth that two shipp went in his aforesaid service of the Commonwealth
with the Grayfalcon, and the 16th January 1693 were set in sight at the
time of the said forenoon. Do you know the General Order for serving
Master of the Stevenglass Captain aforesaid and above for all the said
King of England. And do you know a general service.

C. The said Captains of the said shipp the Stevenglass Captain, and the said shipp the
Grayfalcon with the Master aforesaid was followed and taken by the shipp
aforesaid on or about the 25th day of February 1693 English Year, and
with the said Captains of the English shipp whereof the shipp aforesaid
was within 10 leagues off the coast of the English Shipp wherein
the said Captains of the English shipp and taken aforesaid to have been
of and aboard the said Stevenglass Captain and were sent to the said shipp the
Morning Starre and aforesaid in the following order taking of the aforesaid
shipp aforesaid to command service.

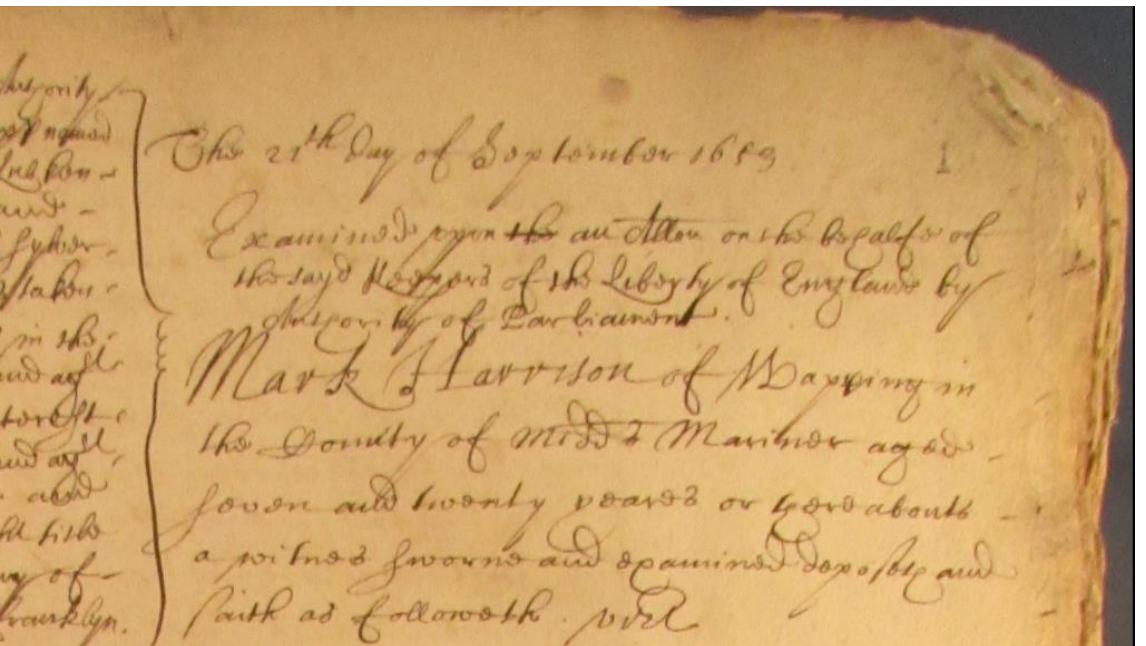
C. The said Captains of the said shipp the Stevenglass Captain and the said shipp the
Grayfalcon on the 25th day of February 1693 also for service mentioned in the first and
subordinate place and out by York, Lancashire and other parts of the publick and
private service of the Commonwealth of England and the said Captains of the said
Shipp of the Stevenglass Captain and the said shipp the Grayfalcon and the said
Captains of the said shipp the Grayfalcon were sent to the said shipp the Stevenglass Captain
at York to be sent to the said shipp the Grayfalcon and the said shipp the Stevenglass Captain
were also sent to the said shipp the Grayfalcon and the said shipp the Stevenglass Captain
was a general and well knowned to all the said Master and Company of the
said shipp the Stevenglass Captain. And further to command service.

C. On the fourth day of September and the day before the 21st day of September 1693
was the said shipp the Grayfalcon very fast bound in the bay aforesaid by the
said Captains of the said shipp the Grayfalcon and the said Master and Company of the
said shipp the Grayfalcon and additional of the shipp the said shipp the Stevenglass Captain
by the said Captains of the said shipp the Grayfalcon.

The 21st Day of September 1689

Examined upon the affair on the behalfs of
the sayd Negro of the Liberty of Enghland by
Mark Garrison of Mappin in
the County of Middx Mariner aged
severall twenty years or there abouts
sworne and examined deposiblg and
saith as followeth ver

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 Harris² and of⁴ what happened⁷ in² the county of Middlesex mariner⁸ aged seven and twenty years

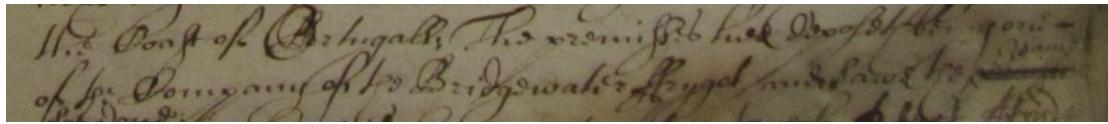
mark Harrison³ of² walking⁸ in² the county of Middlesex mariner¹⁵ aged seven and twenty years or² there⁴ about

mark² Harrison³ of² what⁴ happened in the county of Middlesex mariner¹⁰ aged seven and twenty years or⁴ there⁴

mark² Harrison³ or³ walking in the county of Middlesex mariner⁸ aged² seven and twenty years³ or² the³ about⁵

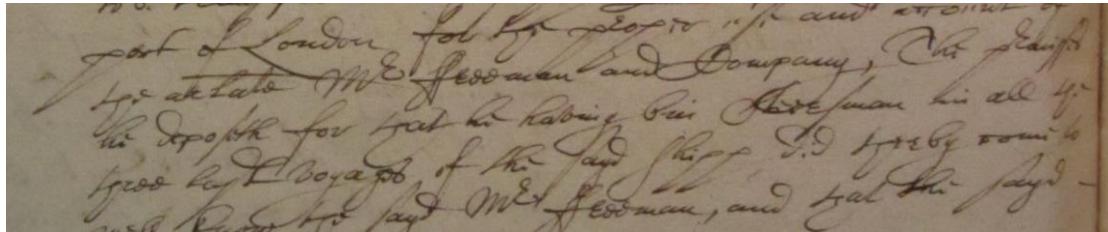
Can we use key word spotting to excavate raw metadata?

LANGUAGE DENOTING OCCUPATION



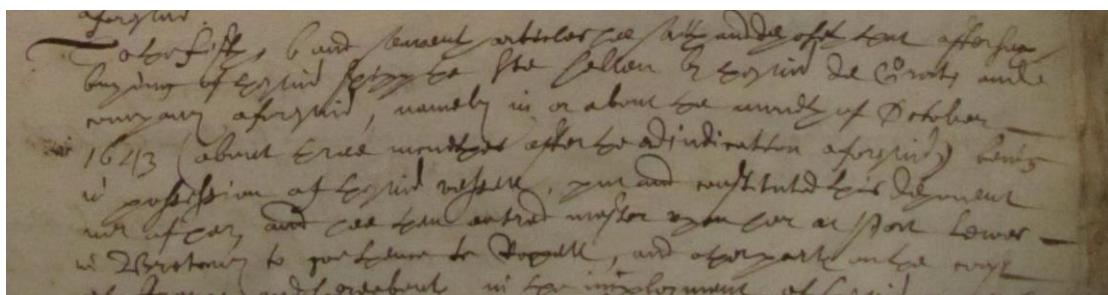
W^t Roast of Orthigall, The premissee hee deposeth
of the Companye of the Bridgewater ffrygott, and sawe her
in the same shipp in the said voyage.

"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]



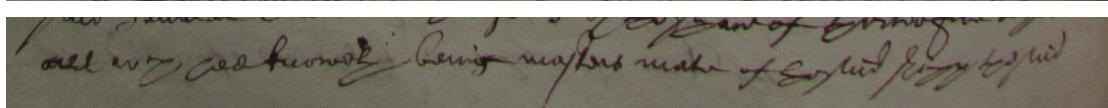
part of London for the sayd shipp and comon
for late Mr. Godman and Company, the shipp
the deponeth for that he had beene Steersman in all ye
free last boyage of the sayd shipp S. I. byt of somme
and hee paid Mr. Godman, and that the sayd

"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]



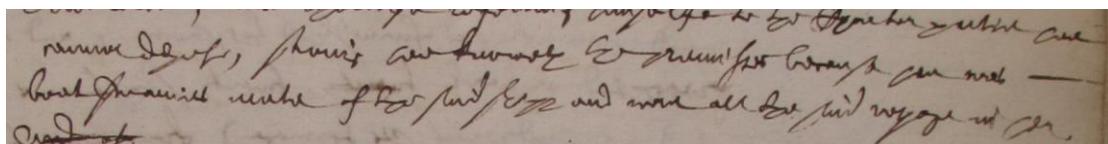
Yours.
To oblyf, and present witness vixt ande off late after
buying of English shipp the *Santa Hellen* or S. H. de Grotts and
many other shipp, namely in or about the moneth of October
1643 (about three moneths after the adiudication aforesaid) being
in possession at English seare, and wrought bid by him
out of sayt and came into port of sayt at Port Lewes
in Bretany to purfume to Foggall, and afterward in the my
lode to Looe in the moneth of Nov

"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 vessel, 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 my ded knoweth being masters mate of sayd shipp by his
name D. J. having now knoweth to go to another shipp and
boat swaines mate of sayd shipp and made all sayd shipp and her
crews

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



name D. J. having now knoweth to go to another shipp and
boat swaines mate of sayd shipp and made all sayd shipp and her
crews

"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 vessel, 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_484r.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 |

| File name&c | Volume | Type | Occupation | Month | Worth | Country of residence | Street/Hamlet | Parish | Town | County | Age | Year of birth | Estimate date of birth | Notes | Name | Last name |
|--|-----------|-----------|--|----------------------------|-------|----------------------|----------------|--------|------------------|-----------|-----|---------------|------------------------|-----------|-----------|-----------|
| KaggleTestSnippet_HCA_1370_f_546r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | United Provinces (Holland) | 47 | 1654 | 1607 John | | Finsbury | Middlesex | 40 | 1655 | 1625 Peter | Cookson | Baker | |
| KaggleTestSnippet_HCA_1370_f_571v.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 30 | 1654 | 1625 Simon | | Hamburg | Hamburg | 26 | 1655 | 1629 John | Lee | Wrest | |
| KaggleTestSnippet_HCA_1370_f_596v_One.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 26 | 1654 | 1629 John | | Levishaw | Stewartry | 26 | 1655 | 1629 John | Lee | Wrest | |
| KaggleTestSnippet_HCA_1370_f_636r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 26 | 1654 | 1629 John | | Levishaw | Stewartry | 26 | 1655 | 1629 John | Lee | Wrest | |
| KaggleTestSnippet_HCA_1370_f_671v.PNG | HCA 13/70 | Marke | Mariner; Boatswain's mate | England | 26 | 1654 | 1629 John | | Levishaw | Stewartry | 26 | 1655 | 1629 John | Lee | Wrest | |
| KaggleTestSnippet_HCA_1368_f_631v.PNG | HCA 13/68 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1629 John | | Levishaw | Stewartry | 26 | 1655 | 1629 John | Lee | Wrest | |
| KaggleTestSnippet_HCA_1371_f_27r.PNG | HCA 13/71 | Initials | Mariner; Boatswain | England | 26 | 1655 | 1629 John | | Levishaw | Stewartry | 26 | 1655 | 1629 John | Lee | Wrest | |
| KaggleTestSnippet_HCA_1371_f_27v_One.PNG | HCA 13/71 | Initials | Mariner; Boatswain | England | 26 | 1655 | 1629 John | | Levishaw | Stewartry | 26 | 1655 | 1629 John | Lee | Wrest | |
| KaggleTestSnippet_HCA_1371_f_27v_Two.PNG | HCA 13/71 | Initials | Mariner; Boatswain | England | 26 | 1655 | 1629 John | | Levishaw | Stewartry | 26 | 1655 | 1629 John | Lee | Wrest | |
| KaggleTestSnippet_HCA_1368_f_640r.PNG | HCA 13/68 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1629 John | | Levishaw | Stewartry | 26 | 1655 | 1629 John | Lee | Wrest | |
| KaggleTestSnippet_HCA_1368_f_687r.PNG - CREATE | HCA 13/68 | Signature | Mariner; Boatswain [of the Civill Society] | England | 26 | 1655 | 1629 John | | Levishaw | Stewartry | 26 | 1655 | 1629 John | Lee | Wrest | |
| KaggleTestSnippet_HCA_1371_f_77v.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 22 | 1655 | 1630 Joseph | | Levishaw | Stewartry | 22 | 1655 | 1630 Joseph | Cappell | Cappell | |
| KaggleTestSnippet_HCA_1370_f_378r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 22 | 1655 | 1630 Robert | | Levishaw | Stewartry | 22 | 1655 | 1630 Robert | Eare | Eare | |
| KaggleTestSnippet_HCA_1370_f_484r.PNG | HCA 13/70 | Signature | Mariner; Quartermaster; Boatswain | England | 22 | 1655 | 1630 William | | Levishaw | Stewartry | 22 | 1655 | 1630 William | Conquett | Conquett | |
| KaggleTestSnippet_HCA_1371_f_139v.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 22 | 1655 | 1630 William | | Levishaw | Stewartry | 22 | 1655 | 1630 William | Conquett | Conquett | |
| KaggleTestSnippet_HCA_1371_f_167r.PNG | HCA 13/71 | Signature | Mariner; Boatswain [of the John and Mary] | England | 22 | 1655 | 1630 William | | Levishaw | Stewartry | 22 | 1655 | 1630 William | Conquett | Conquett | |
| KaggleTestSnippet_HCA_1371_f_279r.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 22 | 1655 | 1630 William | | Levishaw | Stewartry | 22 | 1655 | 1630 William | Conquett | Conquett | |
| KaggleTestSnippet_HCA_1370_f_546r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | United Provinces (Holland) | 41 | 1655 | 1634 Cornelius | | Grat | Middlesex | 34 | 1655 | 1632 Hendrick | Peterson | Peterson | |
| KaggleTestSnippet_HCA_1370_f_571v.PNG | HCA 13/70 | Signature | Mariner; Boatswain | United Provinces (Holland) | 34 | 1655 | 1632 Hendrick | | Stratford | Middlesex | 34 | 1655 | 1632 Hendrick | Peterson | Peterson | |
| KaggleTestSnippet_HCA_1370_f_596v_One.PNG | HCA 13/70 | Signature | Mariner; Boatswain | United Provinces (Holland) | 34 | 1655 | 1632 Hendrick | | Stratford | Middlesex | 34 | 1655 | 1632 Hendrick | Peterson | Peterson | |
| KaggleTestSnippet_HCA_1370_f_636r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | United Provinces (Holland) | 34 | 1655 | 1632 Hendrick | | Stratford | Middlesex | 34 | 1655 | 1632 Hendrick | Peterson | Peterson | |
| KaggleTestSnippet_HCA_1370_f_671v.PNG | HCA 13/70 | Signature | Mariner; Boatswain | United Provinces (Holland) | 34 | 1655 | 1632 Hendrick | | Stratford | Middlesex | 34 | 1655 | 1632 Hendrick | Peterson | Peterson | |
| KaggleTestSnippet_HCA_1368_f_631v.PNG | HCA 13/68 | Signature | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_27r.PNG | HCA 13/71 | Initials | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_27v_One.PNG | HCA 13/71 | Initials | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_27v_Two.PNG | HCA 13/71 | Initials | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1368_f_640r.PNG | HCA 13/68 | Signature | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1368_f_687r.PNG - CREATE | HCA 13/68 | Signature | Mariner; Boatswain [of the Civill Society] | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_77v.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1370_f_378r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1370_f_484r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_139v.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_167r.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_279r.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 30 | 1655 | 1634 Thomas | | Saint Catherine | Stewartry | 30 | 1655 | 1634 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1370_f_546r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | France | 30 | 1655 | 1632 Pierre | | Callice (Calais) | France | 30 | 1655 | 1632 Pierre | Roussel | Roussel | |
| KaggleTestSnippet_HCA_1370_f_571v.PNG | HCA 13/70 | Signature | Mariner; Boatswain | France | 30 | 1655 | 1632 Pierre | | Callice (Calais) | France | 30 | 1655 | 1632 Pierre | Roussel | Roussel | |
| KaggleTestSnippet_HCA_1370_f_596v_One.PNG | HCA 13/70 | Signature | Mariner; Boatswain | France | 30 | 1655 | 1632 Pierre | | Callice (Calais) | France | 30 | 1655 | 1632 Pierre | Roussel | Roussel | |
| KaggleTestSnippet_HCA_1370_f_636r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | France | 30 | 1655 | 1632 Pierre | | Callice (Calais) | France | 30 | 1655 | 1632 Pierre | Roussel | Roussel | |
| KaggleTestSnippet_HCA_1370_f_671v.PNG | HCA 13/70 | Signature | Mariner; Boatswain | France | 30 | 1655 | 1632 Pierre | | Callice (Calais) | France | 30 | 1655 | 1632 Pierre | Roussel | Roussel | |
| KaggleTestSnippet_HCA_1368_f_631v.PNG | HCA 13/68 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1630 William | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_27r.PNG | HCA 13/71 | Initials | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_27v_One.PNG | HCA 13/71 | Initials | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_27v_Two.PNG | HCA 13/71 | Initials | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1368_f_640r.PNG | HCA 13/68 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1368_f_687r.PNG - CREATE | HCA 13/68 | Signature | Mariner; Boatswain [of the Civill Society] | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_77v.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1370_f_378r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1370_f_484r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_139v.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_167r.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1371_f_279r.PNG | HCA 13/71 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1370_f_546r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1370_f_571v.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1370_f_596v_One.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1370_f_636r.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 26 | 1655 | 1632 Thomas | | Millbrook | Wiltshire | 26 | 1655 | 1632 Thomas | Sermenter | Sermenter | |
| KaggleTestSnippet_HCA_1370_f_671v.PNG | HCA 13/70 | Signature | Mariner; Boatswain | England | 26 | 165 | | | | | | | | | | |

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

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

Table 1.2a: HCA 13/53 [f.1r-100v] - Signoff frequency per manuscript page, data from 1637

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
|--------|---|---|---|---|---|---|---|---|---|----|-------|
| | r | p | r | r | r | r | r | r | r | r | |
| 1-10 | 1 | 2 | 3 | 1 | 0 | 1 | 1 | 0 | 2 | 2 | 16 |
| 11-20 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 13 |
| 21-30 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 18 |
| 31-40 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 13 |
| 41-50 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 6 |
| 51-60 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 11 |
| 61-70 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 20 |
| 71-80 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 19 |
| 81-90 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 4 | 1 | 23 |
| 91-100 | 1 | 2 | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 3 | 1 |
| Total | 1 | 2 | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 3 | 165 |

1637

Table 1.3a: HCA 13/58 [f.1r-100v] - Signoff frequency per manuscript page, data from 1642

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
|--------|---|---|---|---|---|---|---|---|---|----|-------|
| | r | p | r | r | r | r | r | r | r | r | |
| 1-10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 15 |
| 11-20 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 16 |
| 21-30 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 |
| 31-40 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16 |
| 41-50 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 |
| 51-60 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 16 |
| 61-70 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 11 |
| 71-80 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 14 |
| 81-90 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 19 |
| 91-100 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 15 |
| Total | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 144 |

1642

Table 1.4a: HCA 13/70 [f.401r-500v] - Signoff frequency per manuscript page, data from 1655

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total | |
|---------|---|---|---|---|---|---|---|---|---|----|-------|----|
| | r | p | r | r | r | r | r | r | r | r | | |
| 401-410 | | | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 13 |
| 411-420 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 |
| 421-430 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 13 |
| 431-440 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 13 |
| 441-450 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 13 |
| 451-460 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | |
| 461-470 | | 1 | 2 | 2 | | | 1 | 2 | | | 8 | |
| 471-480 | | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 5 | |
| 481-490 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | |
| 491-500 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | |
| Total | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 113 | |

1655

Table 1.5a: HCA 13/71 [f.1r-100v] - Signoff frequency per manuscript page, data from 1656

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
|--------|---|---|---|---|---|---|---|---|---|----|-------|
| | r | p | r | r | r | r | r | r | r | r | |
| 1-10 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 |
| 11-20 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 21 |
| 21-30 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 16 |
| 31-40 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 7 |
| 41-50 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 7 |
| 51-60 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 11 |
| 61-70 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 5 |
| 71-80 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| 81-90 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| 91-100 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 |
| Total | | | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 98 |

1656

Table 1.1a: HCA 13/53 [f.1r-100v] - Signoff frequency per manuscript page, data from 1637

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
|--------|---|---|---|---|---|---|---|---|---|----|-------|
| | r | p | r | r | r | r | r | r | r | r | |
| 1-10 | 1 | 2 | 3 | 1 | 0 | 1 | 1 | 0 | 2 | 2 | 16 |
| 11-20 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 13 |
| 21-30 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 18 |
| 31-40 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 13 |
| 41-50 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 6 |
| 51-60 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 11 |
| 61-70 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 20 |
| 71-80 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 19 |
| 81-90 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 4 | 1 | 23 |
| 91-100 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 3 | 1 | 3 | 1 |
| Total | 1 | 2 | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 3 | 165 |

Location of signoffs

1637

Table 1.1b: HCA 13/53 [f.1r-100v] - Signoff frequency per manuscript page & location of signatures, marks & initials, data from 1637

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
|--------|---|---|---|---|---|---|---|---|---|----|-------|
| | r | p | r | r | r | r | r | r | r | r | |
| 1-10 | 1 | 2 | 3 | 1 | 0 | 1 | 1 | 0 | 2 | 2 | 16 |
| 11-20 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 13 |
| 21-30 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 18 |
| 31-40 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 13 |
| 41-50 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 6 |
| 51-60 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 11 |
| 61-70 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 20 |
| 71-80 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 19 |
| 81-90 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 4 | 1 | 1 | 23 |
| 91-100 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 3 | 1 | 3 | 1 |
| Total | 1 | 2 | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 3 | 165 |

Location of marks & initials

1637

Table 1.1c: HCA 13/53 [f.1r-100v] - Signoff frequency per manuscript page & location of mariners, data from 1637

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
|--------|---|---|---|---|---|---|---|---|---|----|-------|
| | r | p | r | r | r | r | r | r | r | r | |
| 1-10 | 1 | 2 | 3 | 1 | 0 | 1 | 1 | 0 | 2 | 2 | 16 |
| 11-20 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 13 |
| 21-30 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 18 |
| 31-40 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 13 |
| 41-50 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 6 |
| 51-60 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 11 |
| 61-70 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 20 |
| 71-80 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 19 |
| 81-90 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 4 | 1 | 1 | 23 |
| 91-100 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 3 | 1 | 3 | 1 |
| Total | 1 | 2 | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 3 | 165 |

Location of mariner signoffs

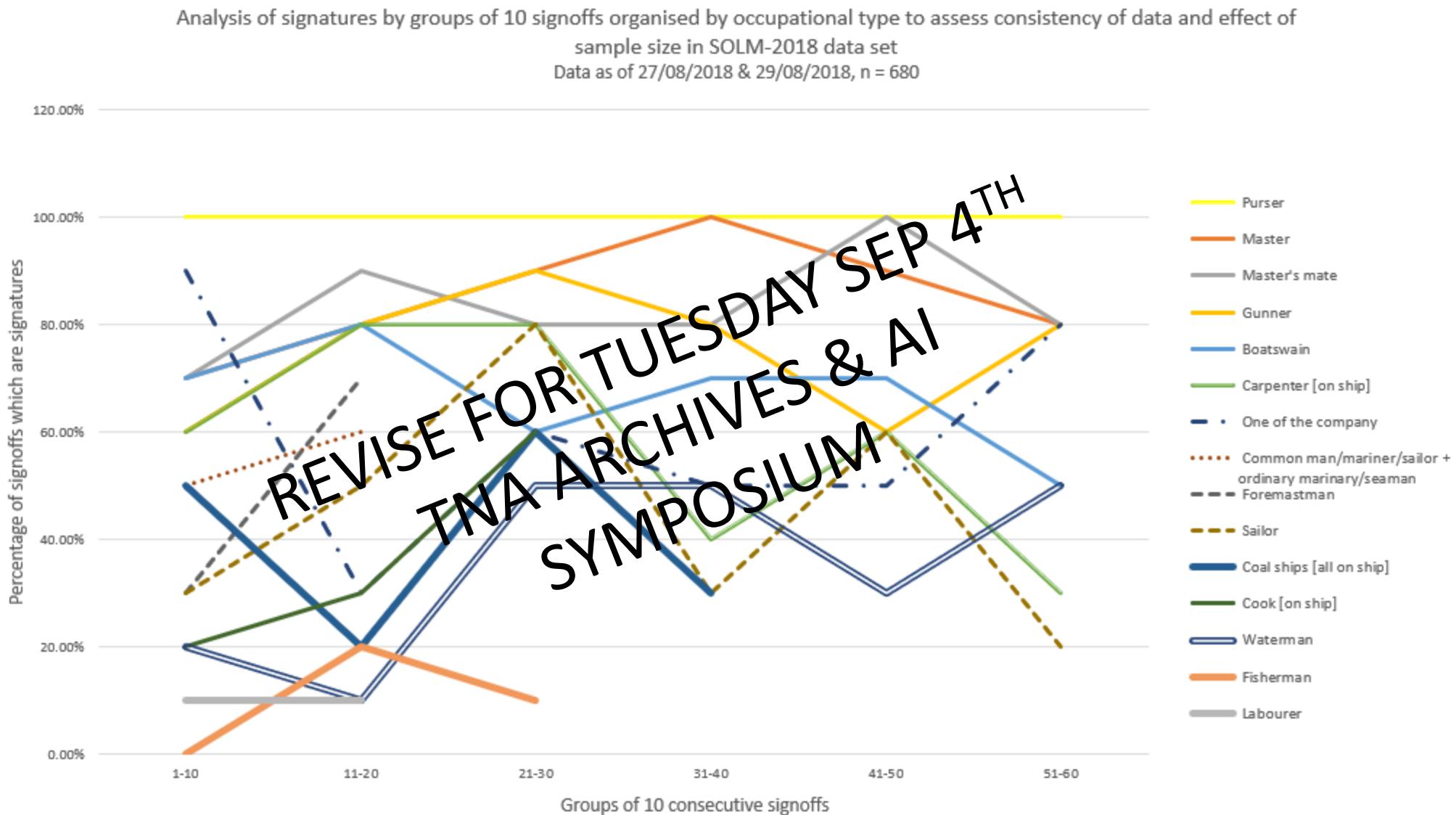
1637

Table 1.1d: HCA 13/53 [f.1r-100v] - Signoff frequency per manuscript page & location of merchants, data from 1637

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | r | p | r | r | r | r | r | r | r | r | |

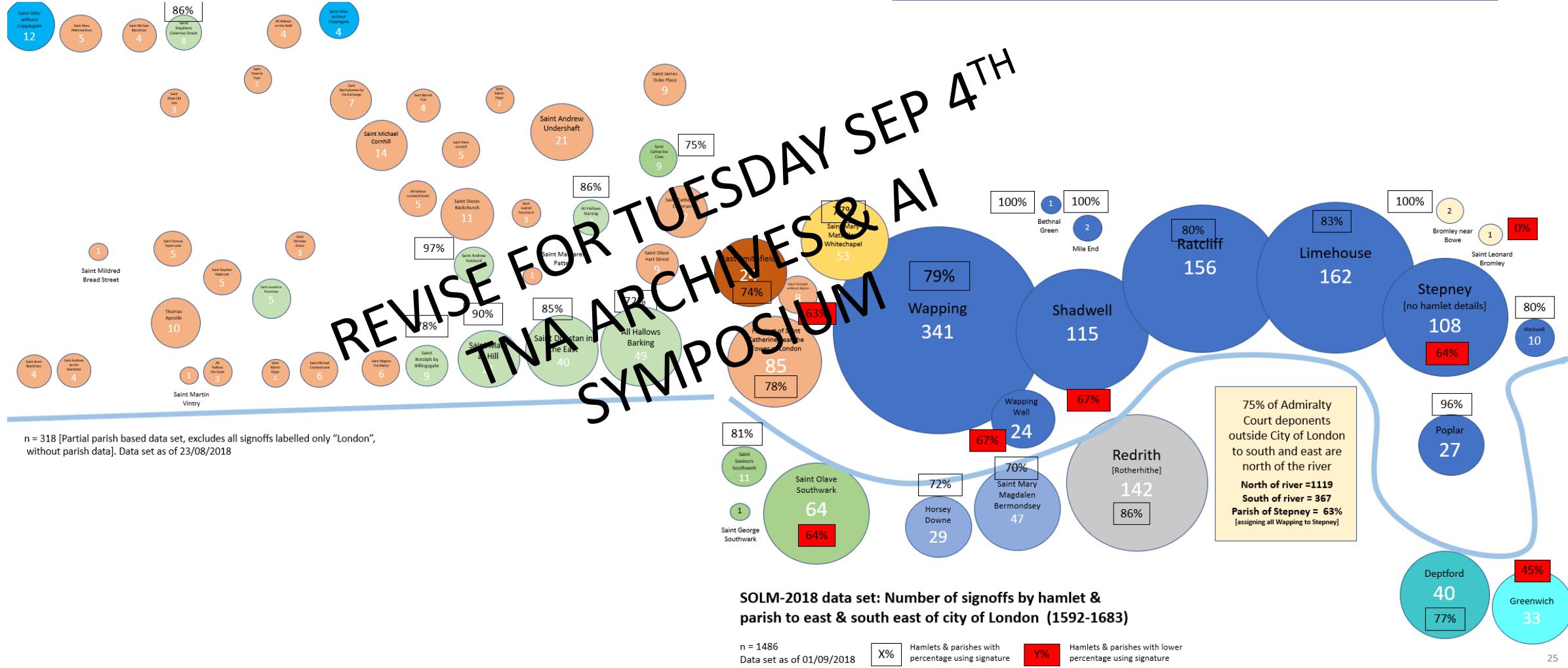
<tbl_r cells="12" ix="2" maxcspan="1" maxrspan="1" usedcols="

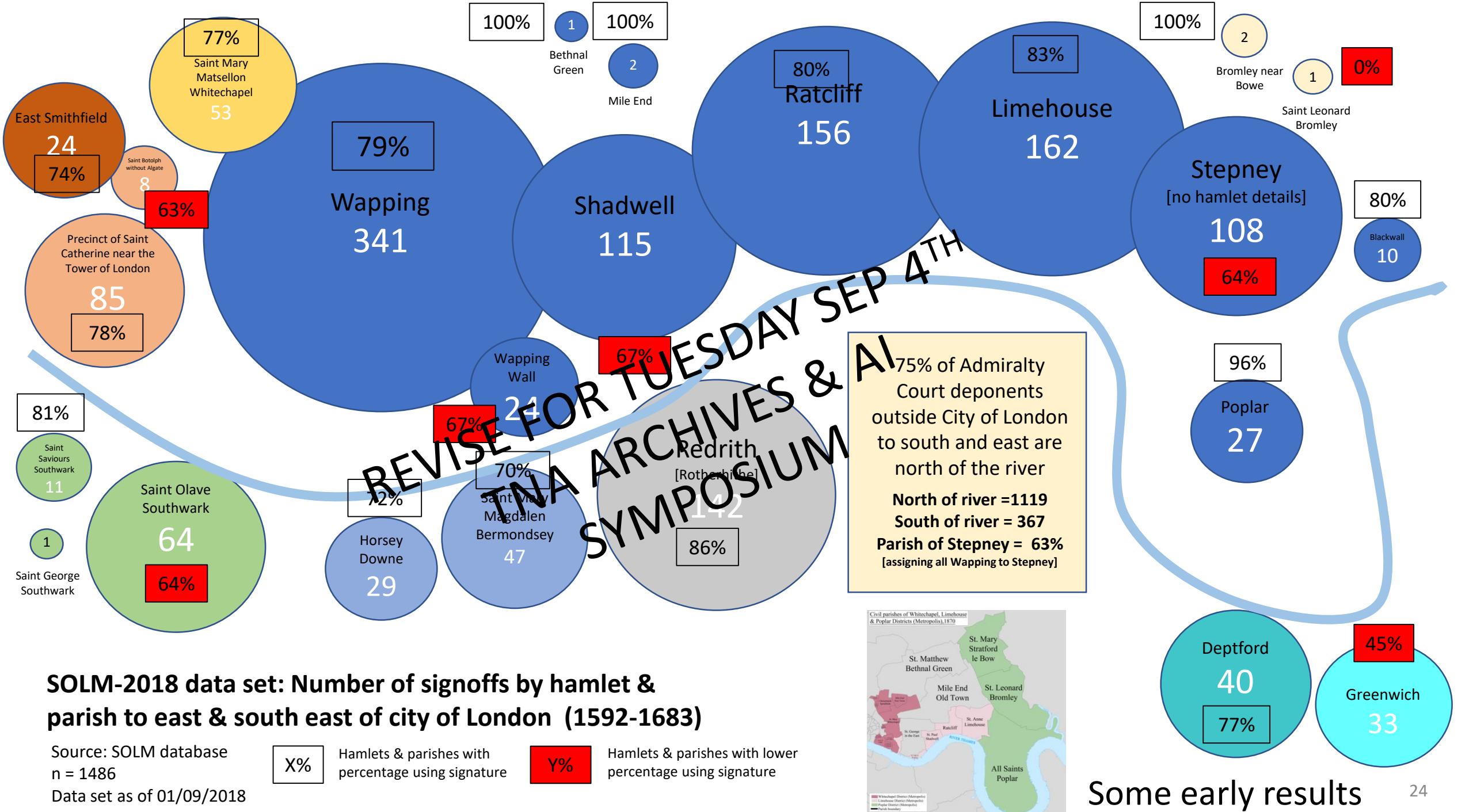
Some early results



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





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Twitter:

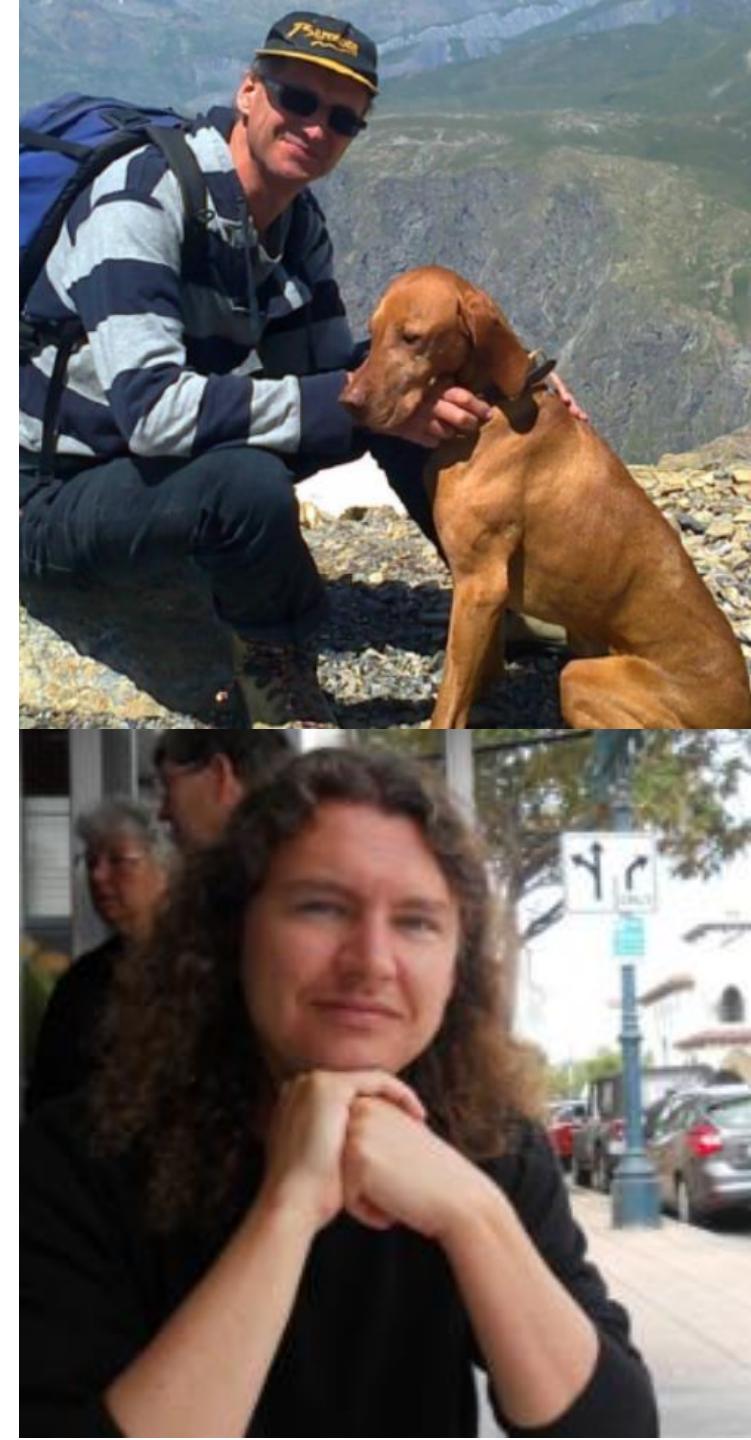
[Marinelivesorg](https://twitter.com/Marinelivesorg)

Working
with:



The National Archives

kaggle Competitions



Discussion

**Archives and AI symposium
SOLM-2018
Supplementary material**