

REVISED DRAFT FOR
REVIEW

SOLM-2018 data set

Archives & AI

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

Project portfolio

<http://www.chronoscopic.org>

MarineLives



Signs of Literacy



EM Textiles, Garments & Dyestuffs Glossary



Maphackathon



SOLM-2018



EM Maritime & Mercantile Gazetteer



Some perspective

Labeled Faces in the Wild

Labeled Faces in the Wild Home

UNIVERSITY OF MASSACHUSETTS AMHERST, MASS.

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 The aligned images include "funneled images" (ICCV 2007), LFW-a, which uses an unpublished method of alignment, and "deep funneled" images (NIPS 2012).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

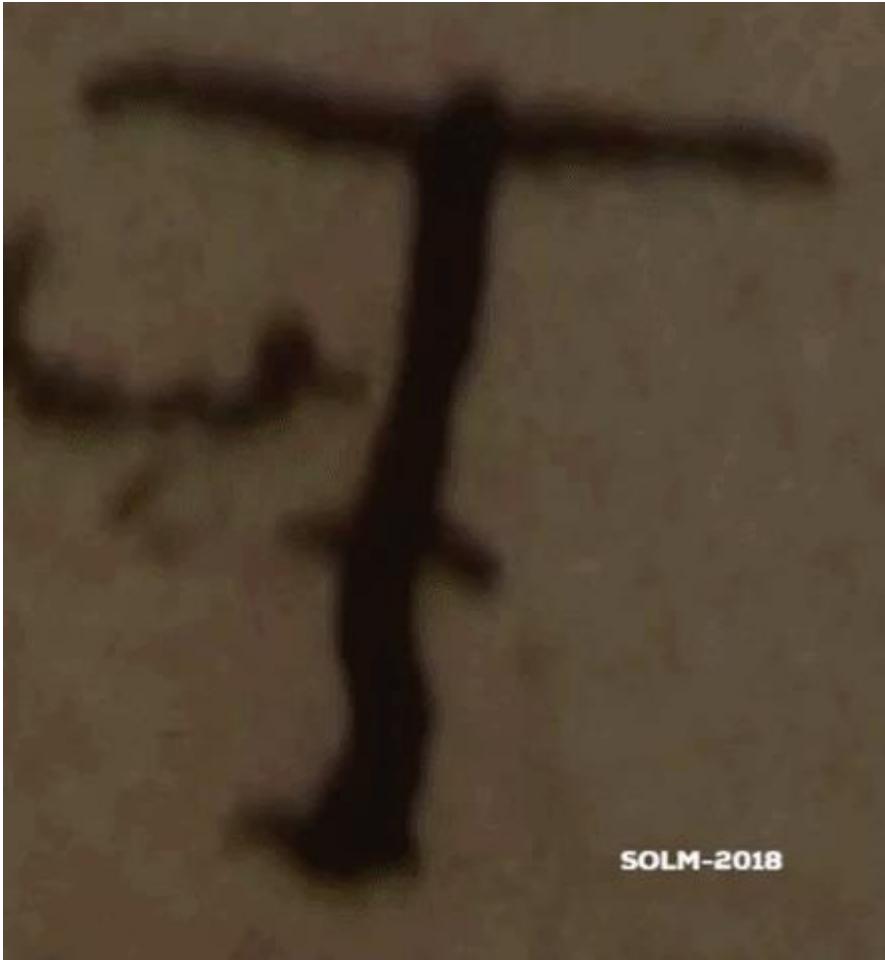
Abstract In 2007, Labeled Faces in the Wild was released in an effort to spur research in face recognition, specifically for the problem of face verification with unconstrained images. Since that time, more than 50 papers have been published that improve upon this benchmark in some respect. A remarkably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

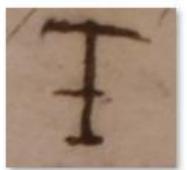
Pattern seeking

How many different letters can you recognise?



Click for animated GIF

Initials – Ts and Js



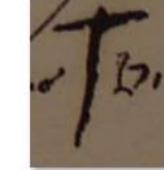
T6.png



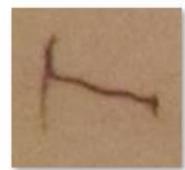
T7.png



T8.png



T9.png



T10.png



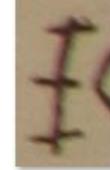
J5.PNG



J6.PNG



J7.PNG



J8.PNG



J9.PNG



T11.PNG



T12.PNG



T13.PNG



T14.PNG



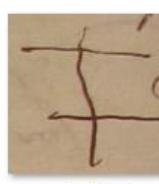
T15.PNG



J10.PNG



J11.PNG



J12.PNG



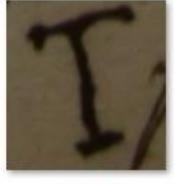
J13.PNG



J14.PNG



T16.PNG



T17.PNG



T18.PNG



T20.PNG



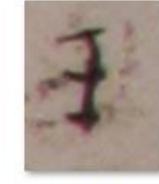
T21.PNG



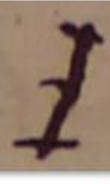
J15.PNG



J16.PNG



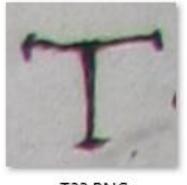
J17.PNG



J18.PNG



J19.PNG



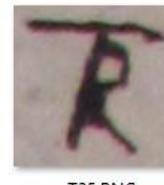
T22.PNG



T23.PNG



T24.PNG



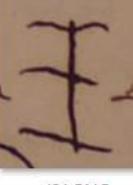
T25.PNG



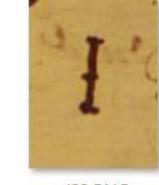
T26.PNG



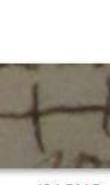
J20.PNG



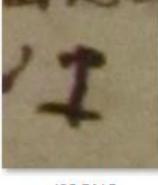
J21.PNG



J22.PNG



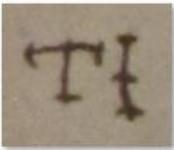
J24.PNG



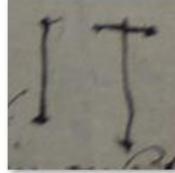
J25.PNG



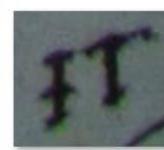
T28.PNG



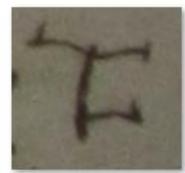
TJ28.PNG



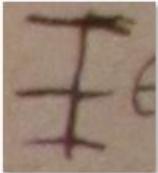
TJ30.PNG



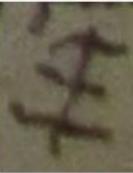
TJ31.PNG



TL29.PNG



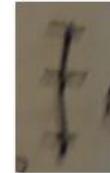
J26.PNG



J27.PNG



J28.PNG



J30.PNG



J31.PNG

We need to work together if we are going to make sense of our digitised manuscript archives



'From punishing to pleasurable, how cursive writing is looping back into our hearts', [Washington Post online edition, 03/09/2018](#) - Emilia Schweitzer, left, and Danielle Falls write with homemade quills during a summer day camp devoted to cursive instruction in Danbury, Conn. (Monica Jorge/For The Washington Post)

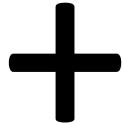


Image processing

Machine learning

Natural Language Programming

Key word spotting

Controlled vocabularies

Programmable decision rules

SOLM-2018 database

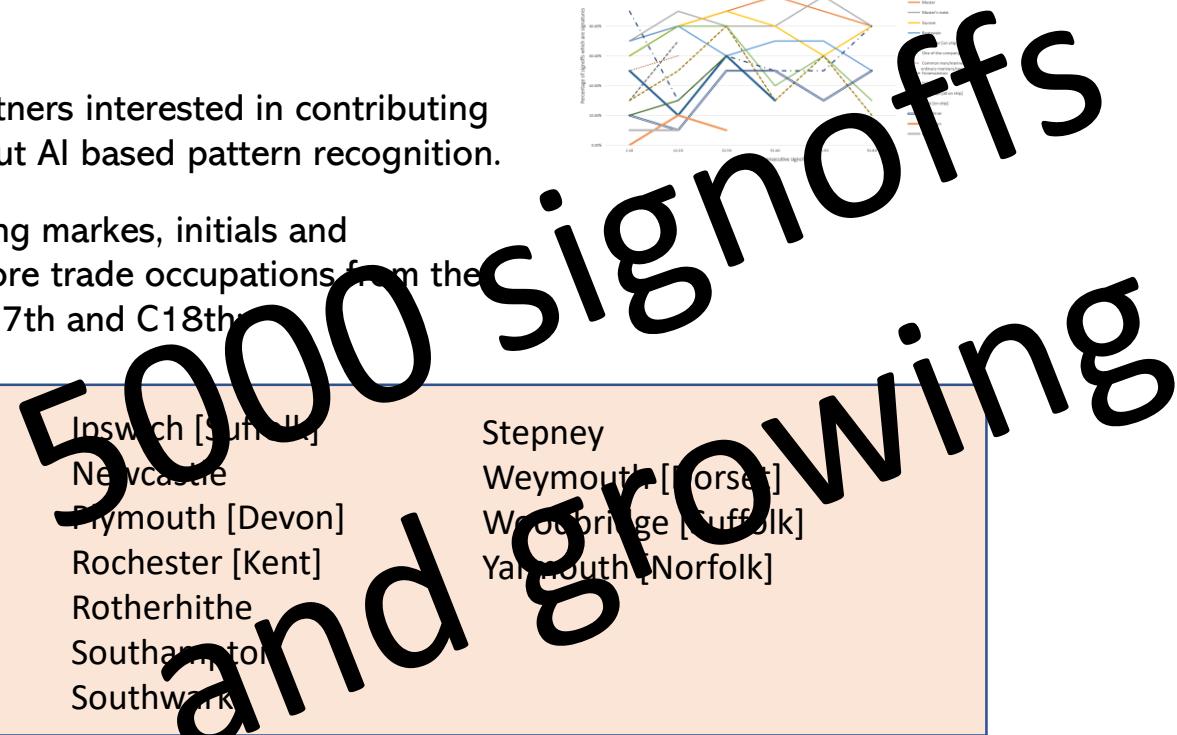
The **SOLM-2018 database** is a tool for historians and computer scientists to work with marks, initials and signatures. It has been designed to support the exploration of historical literacy and the development of tools for automatic metadata creation.

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.

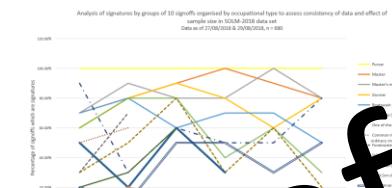
We are looking for UK and international archival partners interested in contributing content to the SOLM-2018 tool and in learning about AI based pattern recognition.

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	

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 25 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 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]	Ipswich [Suffolk]	Portsmouth [Devon]
Barnstaple [Devon]	Falmouth [Devon]	Newcastle	Weymouth [Dorset]
Bermondsey	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.
 Bristol, United Kingdom
[bristolarchives.org.uk/bris](http://bristolarchives.org.uk)
 Joined April 2011

The National Archives

THE HUNTINGTON

DORSET HISTORY CENTRE

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](#)

Westminster Abbey

SOUTHAMPTON CITY COUNCIL

Dorset History Centre
 Dorset History Centre collects & preserves archives & local studies for Bournemouth, Dorset & Poole for all to enjoy. Use policy d4u.org.uk/jkVKV
 Dorchester, England
dorsetforyou.gov.uk/libraries-hist...
 Joined July 2015

TYNE & WEAR ARCHIVES & MUSEUMS

TWAM Museums
 Regional museum, art gallery and archives service managing Tyneside and the Wear. Tweets by [@TyneandWeard](#)

Essex Record Office
ARCHIVE EXPLORER

Essex Record Office
 @essexarchive
 The storehouse of Essex's past.
 Chelmsford, Essex
essexrecordoffice.co.uk

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, UK
kent.gov.uk
 Kent, UK
 Joined February 2015

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

Hull History Centre
 News, tips and events from Hull's home page featuring the Hull archives, Hull City Local Studies Library and hullhistorynews.org.uk

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

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

Signs of Literacy Kaggle Research Competition

Signs of Literacy Kaggle Research Competition, 2018
Colin Greenstreet on LinkedIn
April 30, 2018

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.

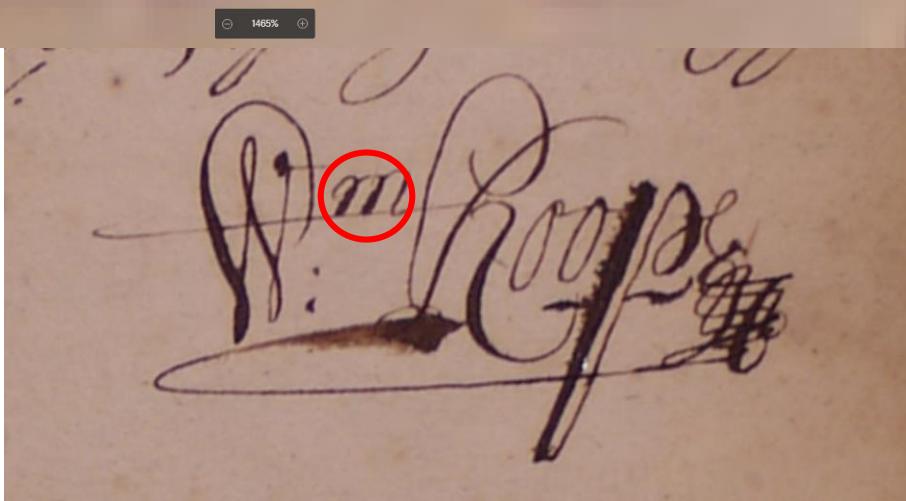
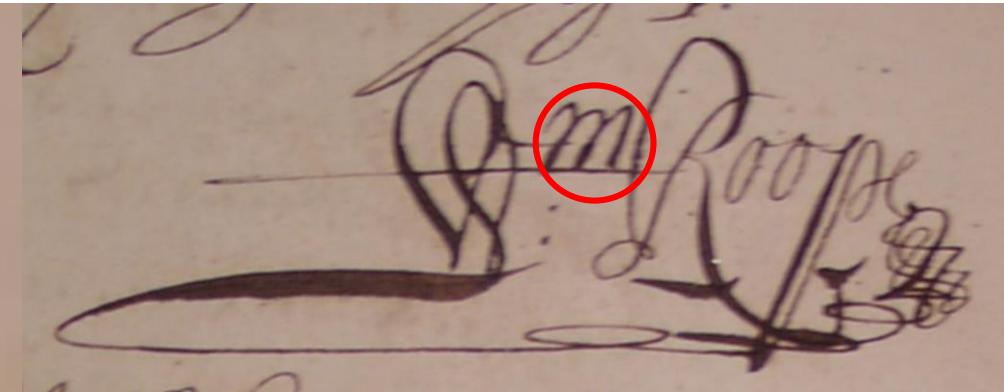
Kaggle will cover the running costs of the competition. We will provide the prize pool, and are now seeking to raise US \$30,000 from potential sponsors and partners.

The Proof of Concept will contain two parts:

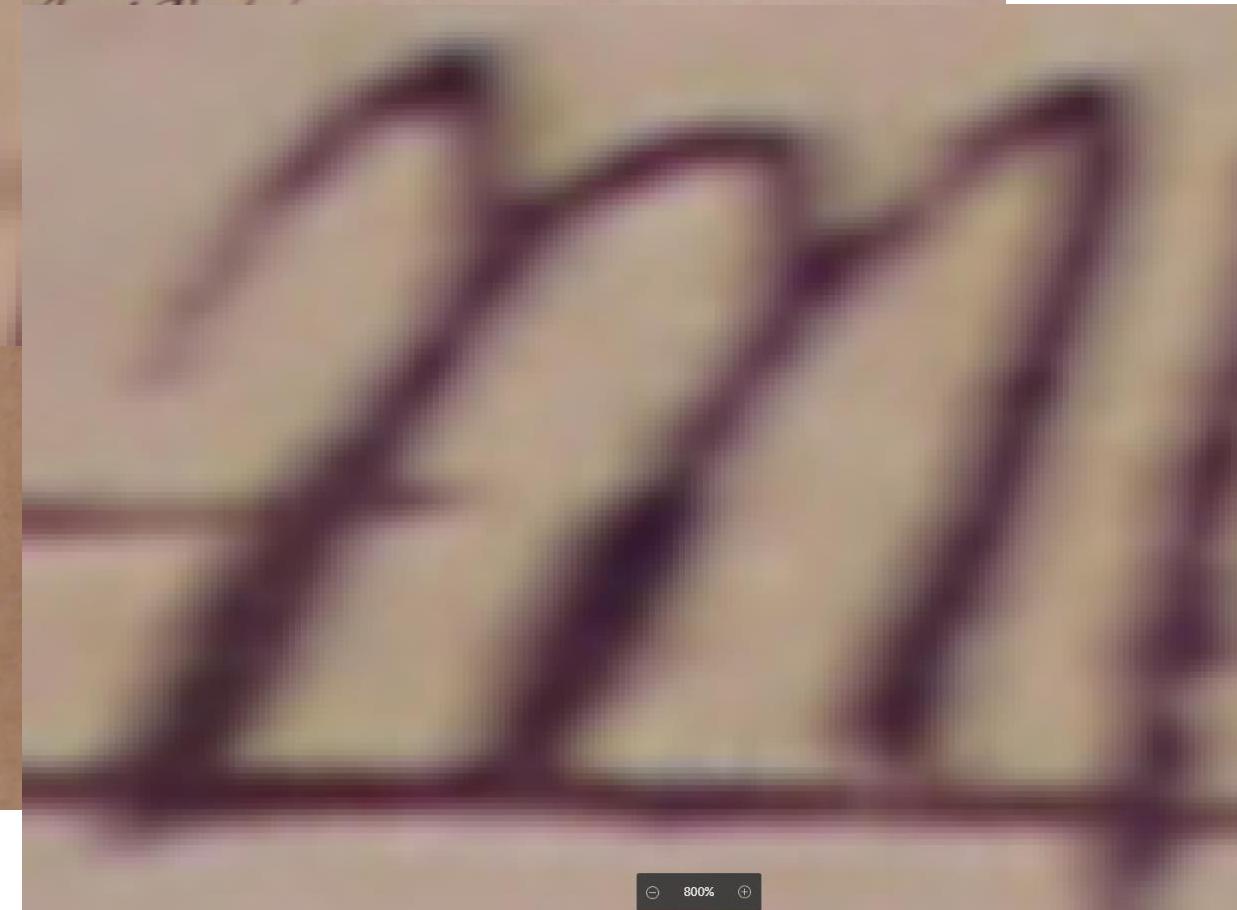
- (1) Algorithmic identification of marks, initials and signatures.
- (2) Algorithmic discrimination between degrees of "sophistication" within the three categories of "mark"; "initial(s)", and "signature".

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.

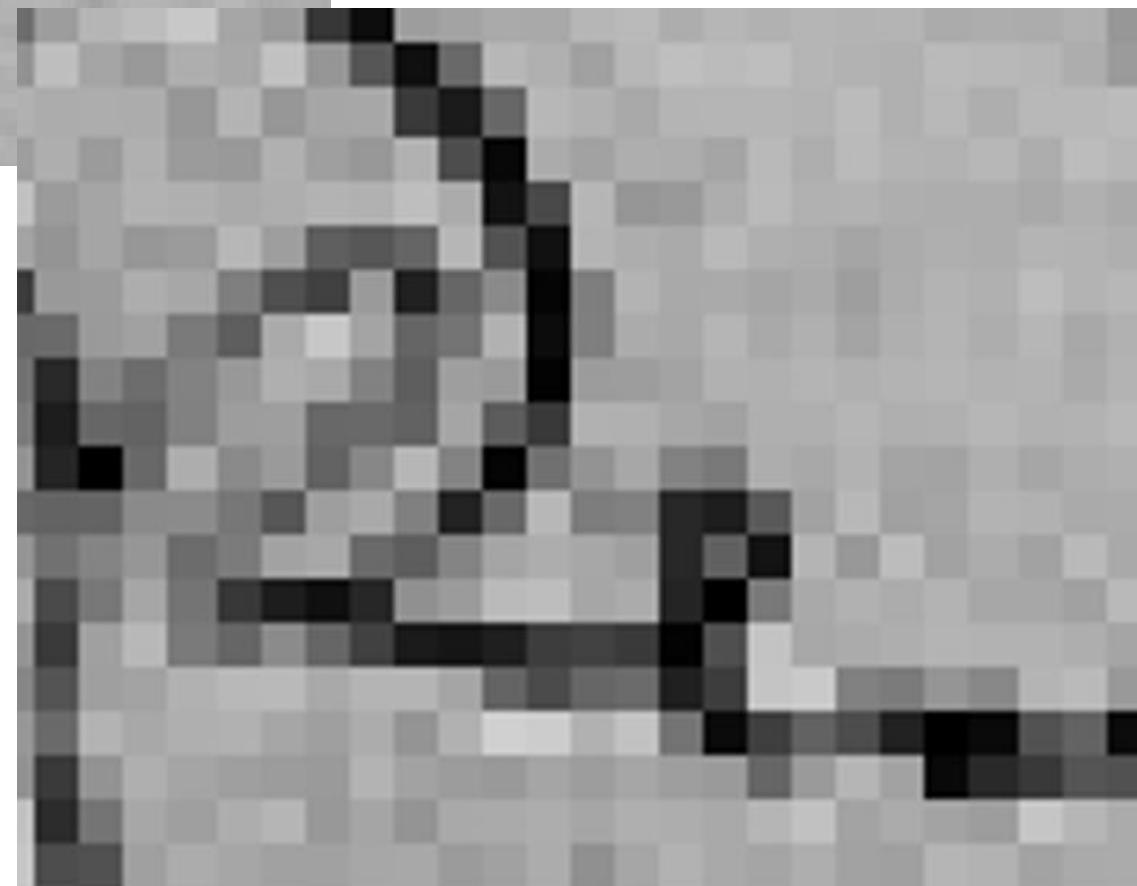
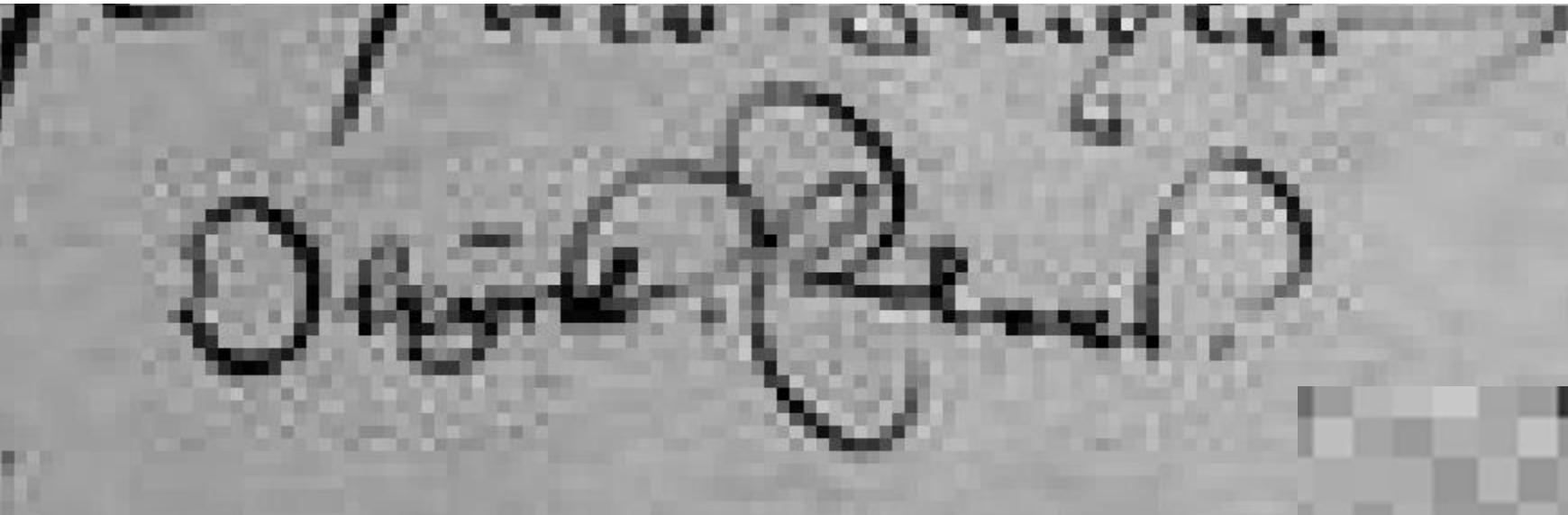
High pixel definition



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



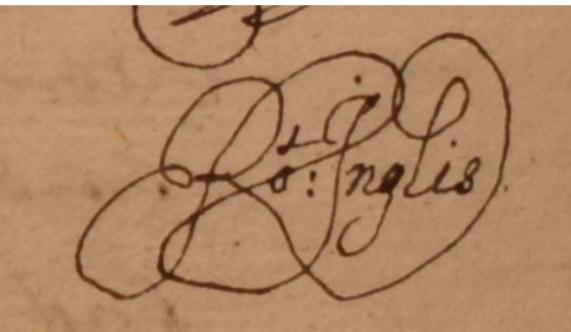
Color	Color Code	Percentage
#e0a080	0.855975	
#c08060	0.084403	
#806040	0.039371	
#604020	0.013208	
#402020	0.007044	

File to upload:
 No file chosen

Number of colors:

 delta:

(1-255)
 Reduce Brightness: Yes No
 Reduce gradient: Yes No



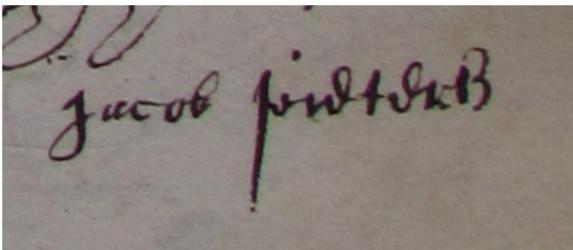
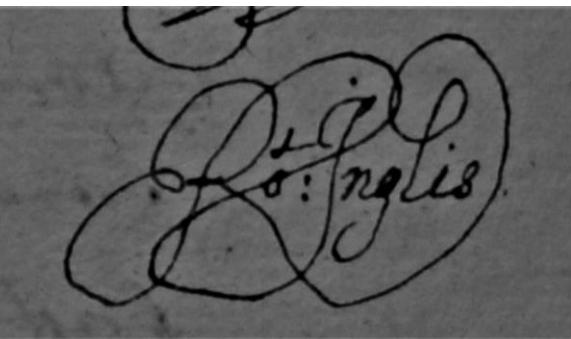
Color	Color Code	Percentage
#c08060	0.883721	
#806040	0.063798	
#604020	0.048605	
#402000	0.003876	

File to upload:
 No file chosen

Number of colors:

 delta:

(1-255)
 Reduce Brightness: Yes No
 Reduce gradient: Yes No



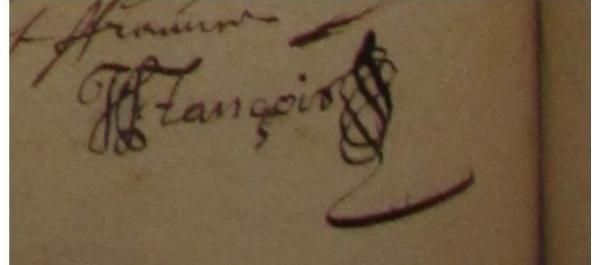
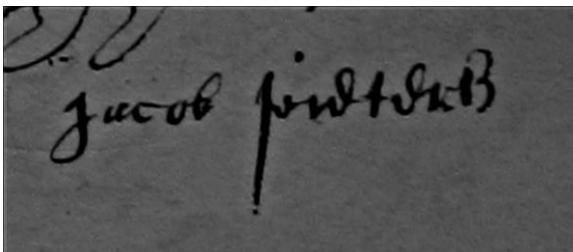
Color	Color Code	Percentage
#808080	0.969271	
#604040	0.030729	

File to upload:
 No file chosen

Number of colors:

 delta:

(1-255)
 Reduce Brightness: Yes No
 Reduce gradient: Yes No



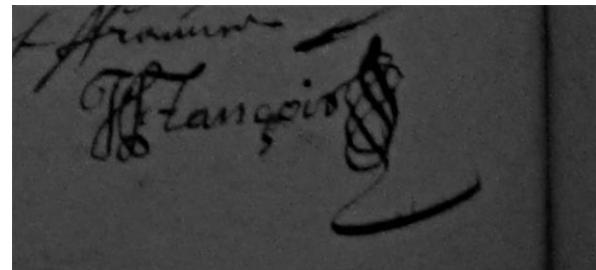
Color	Color Code	Percentage
#806040	0.806762	
#604020	0.125143	
#402020	0.062000	
#202000	0.006095	

File to upload:
 No file chosen

Number of colors:

 delta:

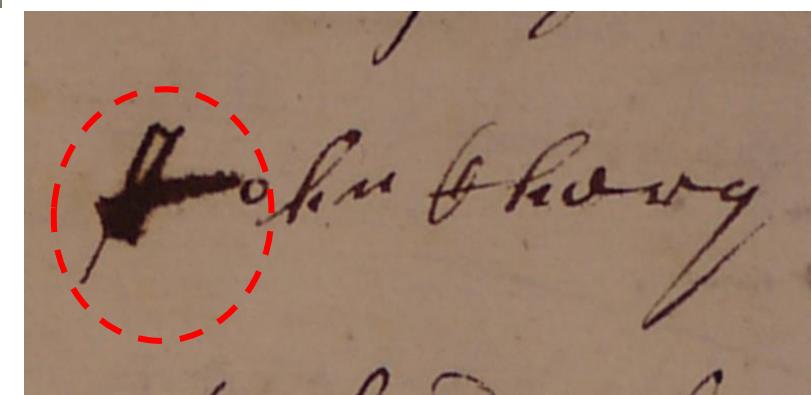
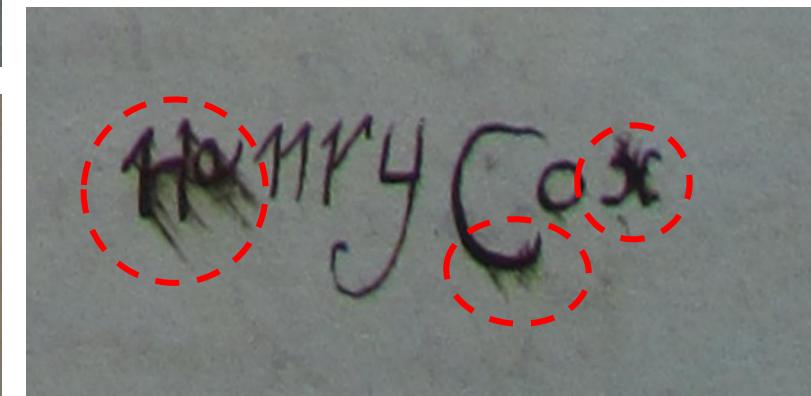
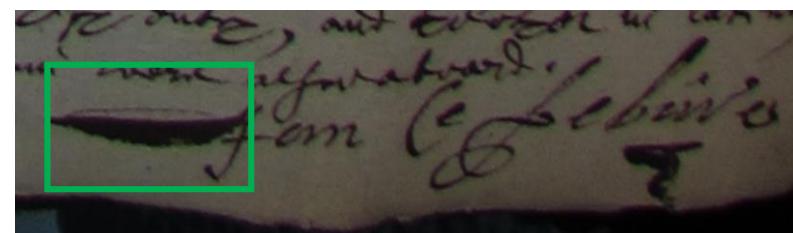
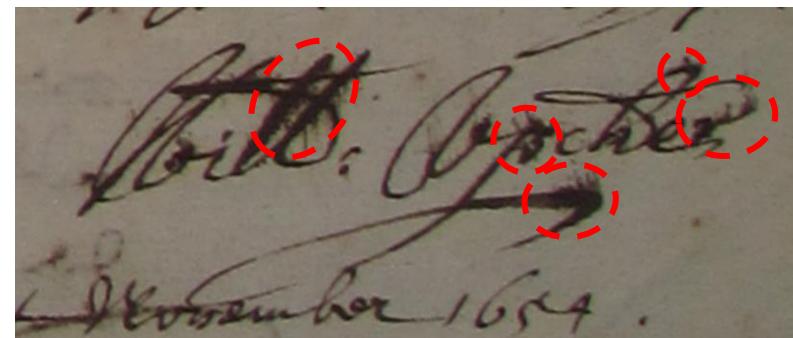
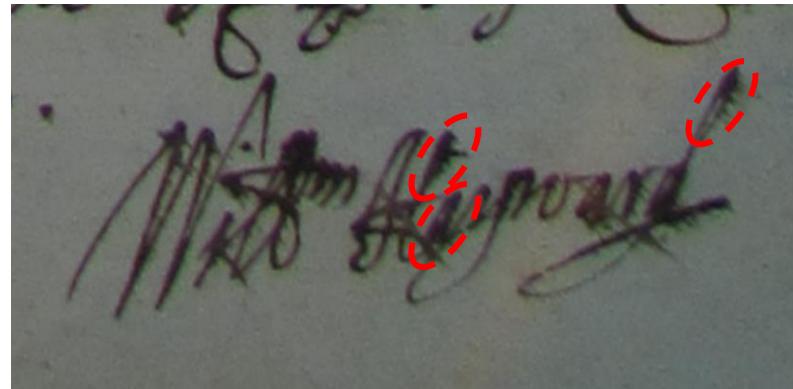
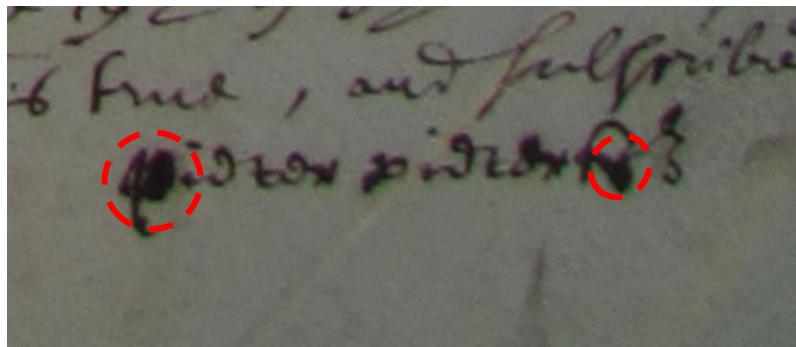
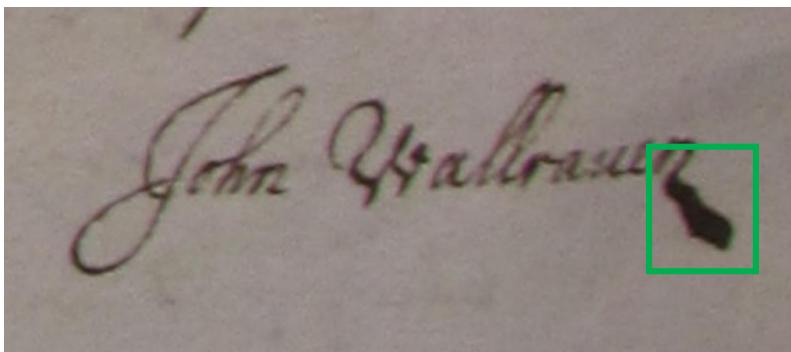
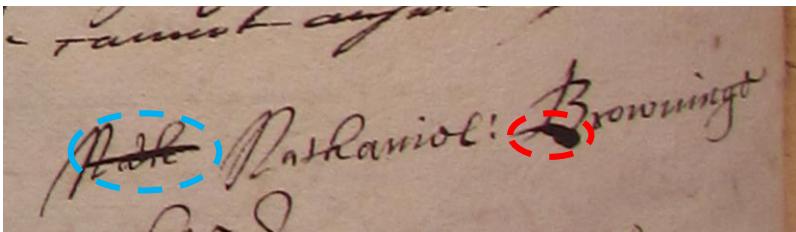
(1-255)
 Reduce Brightness: Yes No
 Reduce gradient: Yes No



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



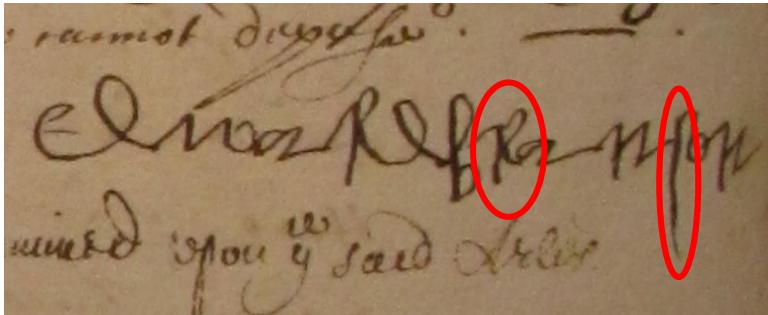
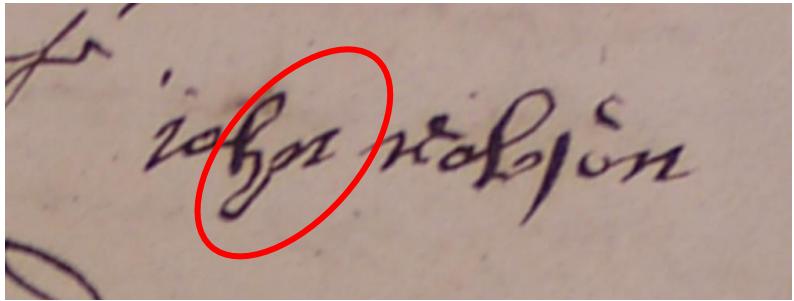
Stylistic feature or smudge?



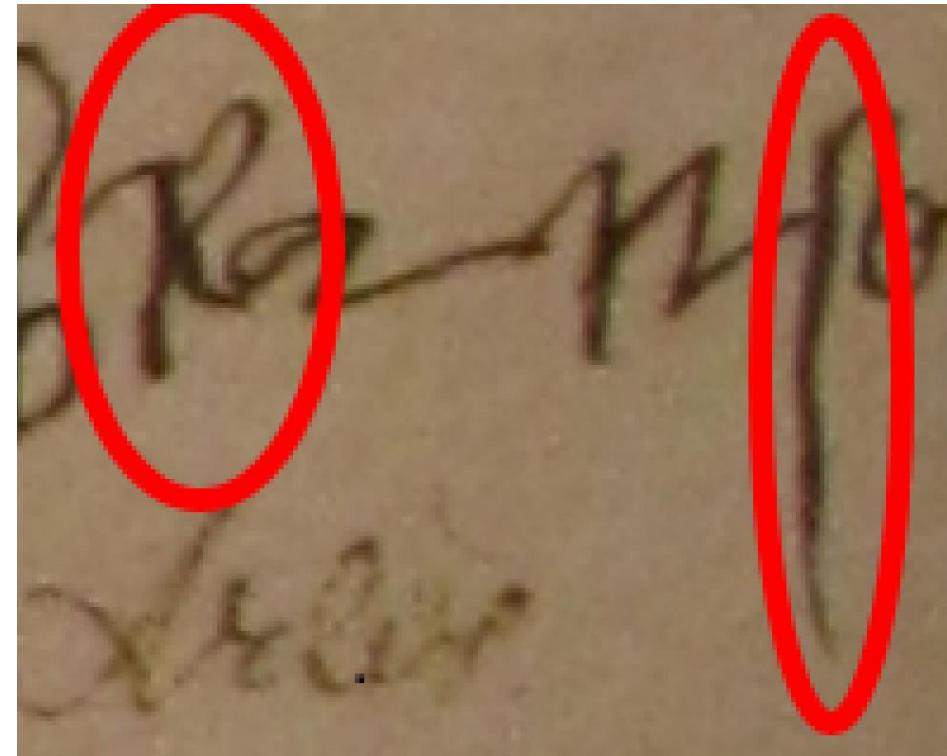
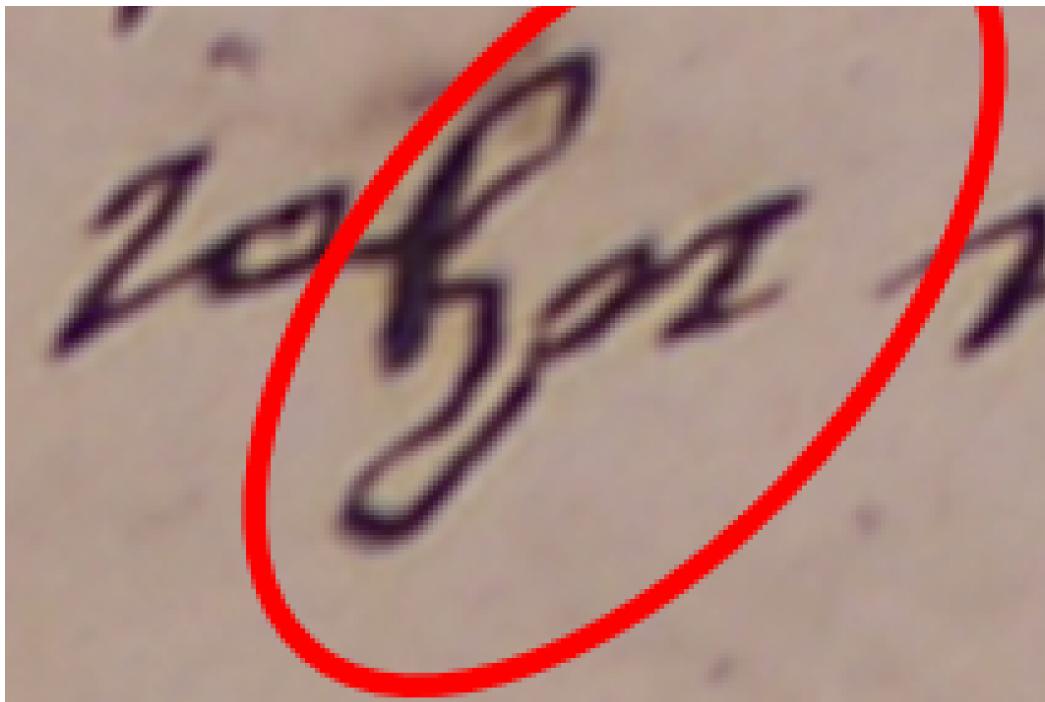
Deletion

Source: Clockwise from top LH side:
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

Detection of “shake” in straight and curved lines



HYPOTHESIS: Shaky lines are a sign of poor signature execution (and by inference, poor handwriting execution) suggesting lower level of literacy than smooth executed lines

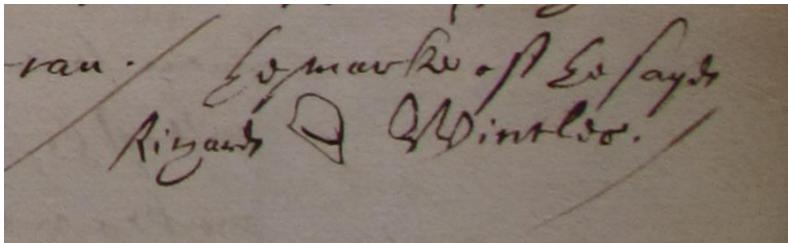


Shaky straight lines and/or loops

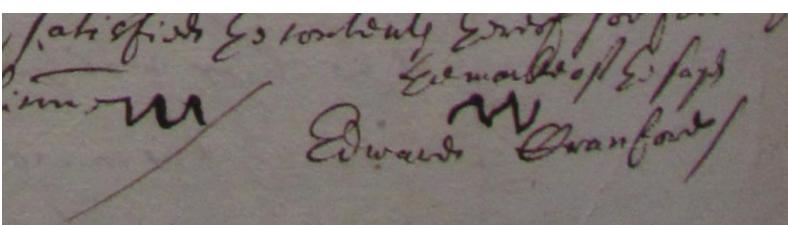
Clockwise, from top LH: KaggleTestSnippet_HCA_1371_f.435v.PNG,
KaggleTestSnippet_HCA_1368_f.483v.PNG,
KaggleTestSnippet_HCA_1368_f.483v_PIXELS.PNG,
KaggleTestSnippet_HCA_1371_f.435v.PNG_PIXELS.PNG

Porters handling coals, whale oil, ginger & corn

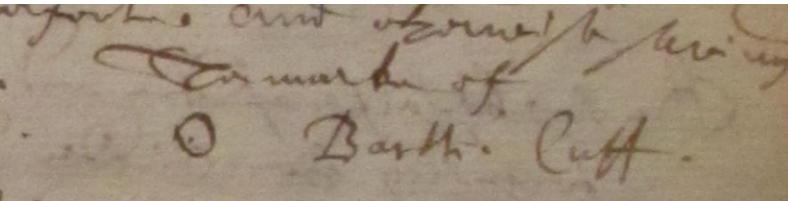
Richard Wincles, thirty-three year old porter, of the parish of Stepney, Middlesex, Dec. 15, 1656; employed as a labourer with fifteen other men to unload coals from the *Imployment* moored near Execution Dock, Wapping, into lighters for fixed rate of 12 s per man ([HCA 13/70 f.554r](#))



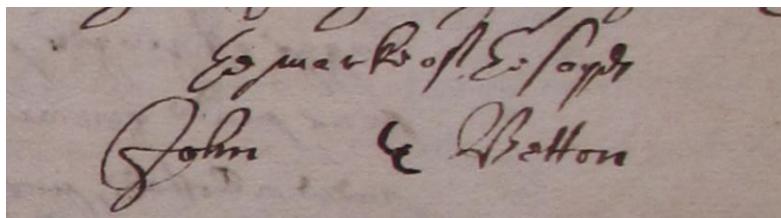
Edward Cranford, forty-four year old coale heaver or porter, of the parish of Stepney, Middlesex, Dec. 15, 1656; employed as a labourer with fifteen other men to unload coals from the *Imployment* moored near Execution Dock, Wapping, into lighters for fixed rate of 12 s per man ([HCA 13/70 f.555v](#))



Bartholomew Cuff, sixty year old porter of the Stillyard, of the parish of Allhallows the Greate, London, May 15, 1658; assisted in the landing of whale oil from lighters at the Stillyard Key and loading them away into a warehouse ([HCA 13/70 f.555v](#))



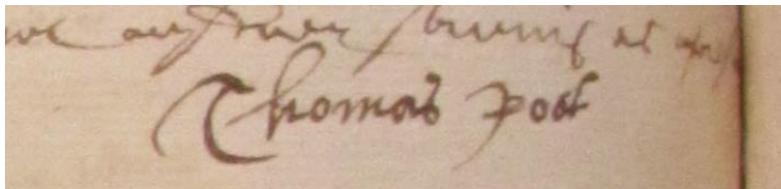
John Betton, fifty-four year old citizen and white baker of London, of the parish of Saint Buttolph Algate, London, Jul. 31, 1655; self-described as a porter employed by the Commissioners for Prize Goods to deliver ginger from a warehouse at Ralphes Key ([HCA 13/70 f.449r](#))



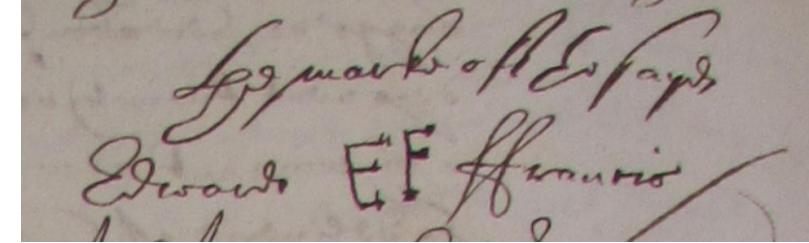
Edward Sherwin, fifty-six year old cittizen and leatherseller, of the parish of Little Allhallowes, London, Jul. 31, 1655; self-described as a porter employed by the Commissioners for Prize Goods to deliver ginger from a warehouse at Ralphes Key ([HCA 13/70 f.449v](#))



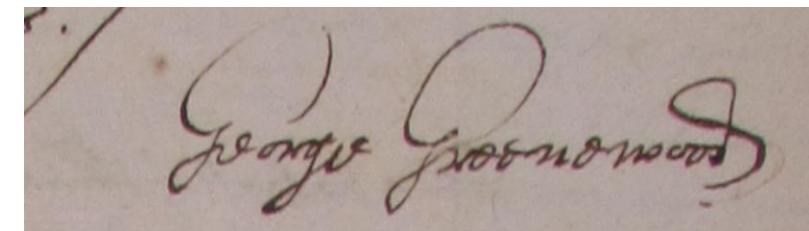
Thomas Roots, twenty-nine year old porter, of the parish of Greate Allhallowes, London, May 15, 1658; assisted in the landing of whale oil from lighters at the Stillyard Key, as one of the Stillyard porters, and loading them away into a warehouse ([HCA 13/72 f.330v](#))



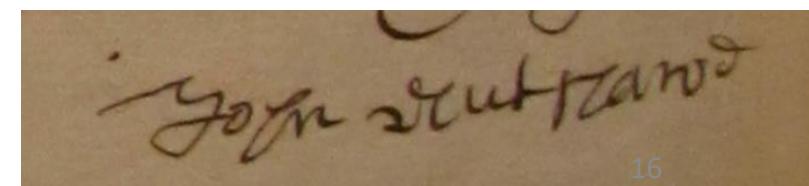
Edward ffrancis, citizen and merchant taylor of London, of the parish of Saint Olave in Southwarke, Jul. 31, 1655; self-described as a porter employed by the Commissioners for Prize Goods to deliver ginger from a warehouse at Ralphes Key ([HCA 13/70 f.450v](#))



George Greenwood, thirty year old citizen and vintner of London, of the parish of Saint Buttolph Bishopsgate, London, Jul. 31, 1655; self-described as a porter employed by the Commissioners for Prize Goods to deliver ginger from a warehouse at Ralphes Key ([HCA 13/70 f.454r](#))



John Nutshall, fifty-five year old corne porter, of the parish of Saint Saviours Southwarke, Nov. 19, 1653; employed with a barber chyrurgeon/corne meter, an additional corne-meter, and other labourers to unlade a cargo of what in the *ffortune* of Stettin, moored against Limehouse; eight years of experience as a corne porter ([HCA 13/70 f.352v](#))



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 textured surface, possibly wood or metal. The marking consists of a vertical stem with a horizontal bar extending from the top and a loop at the bottom. Navigation arrows are visible on the left and right sides of the image frame.

Richard Shepperd

Andrew Beake (2)

Andrew Beake (1)

John Tylor

John Burnelau

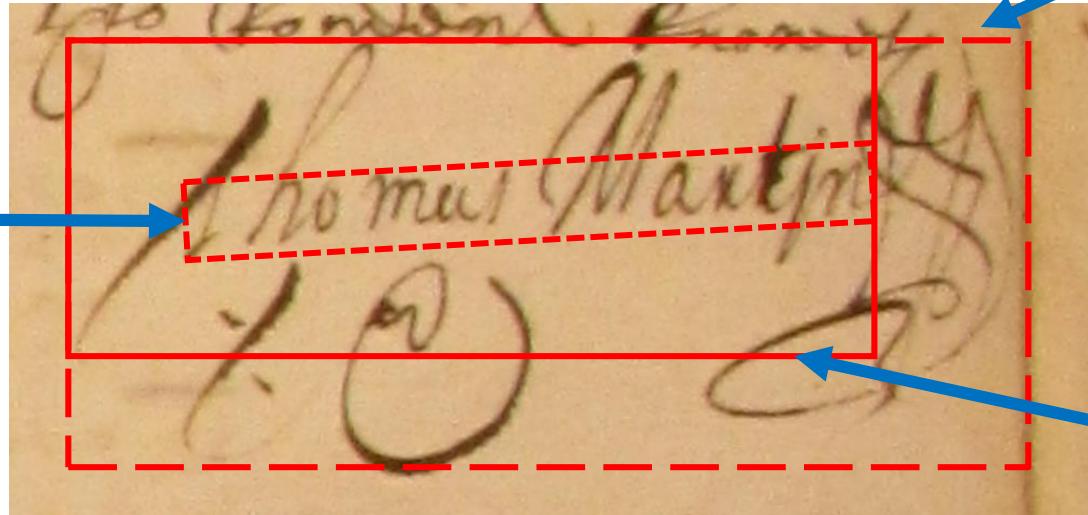
Mockup of a IIIF manifest in Mirador viewer, using <http://projectmirador.org/demo/> ;
http://www.marinelives.org/wiki/HCA_13/70_f.252v_Annotate

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

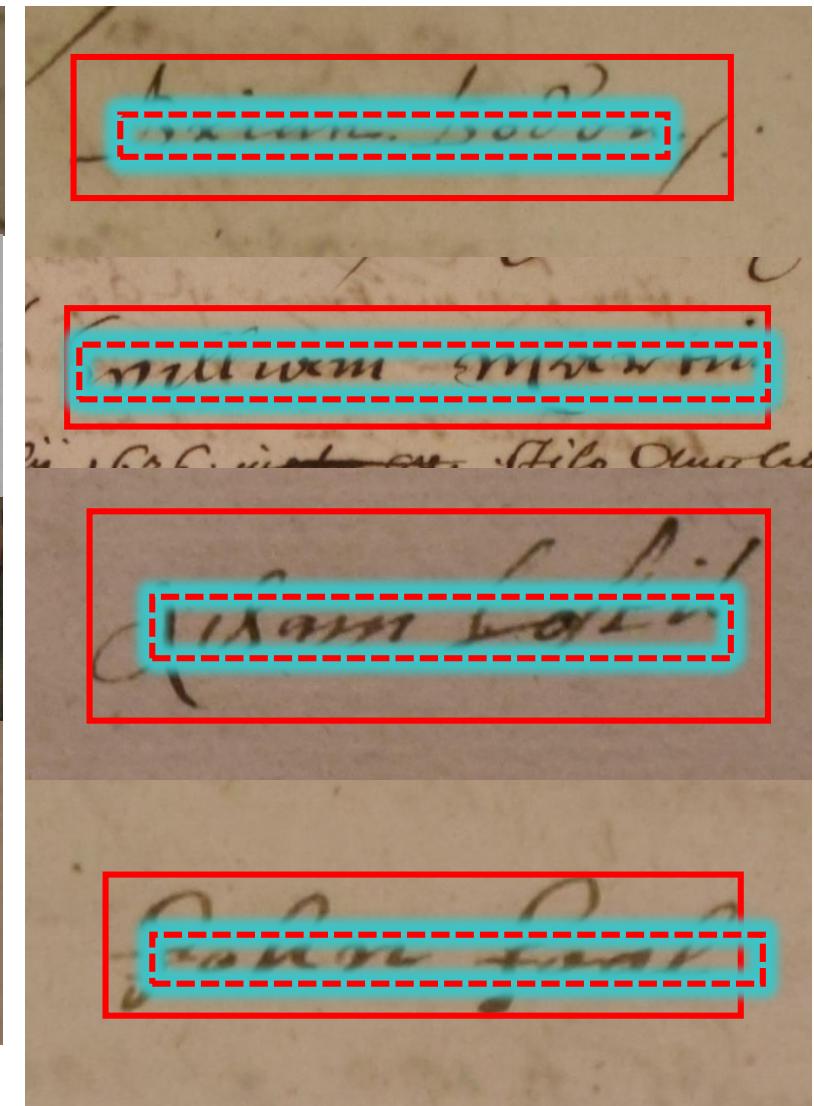
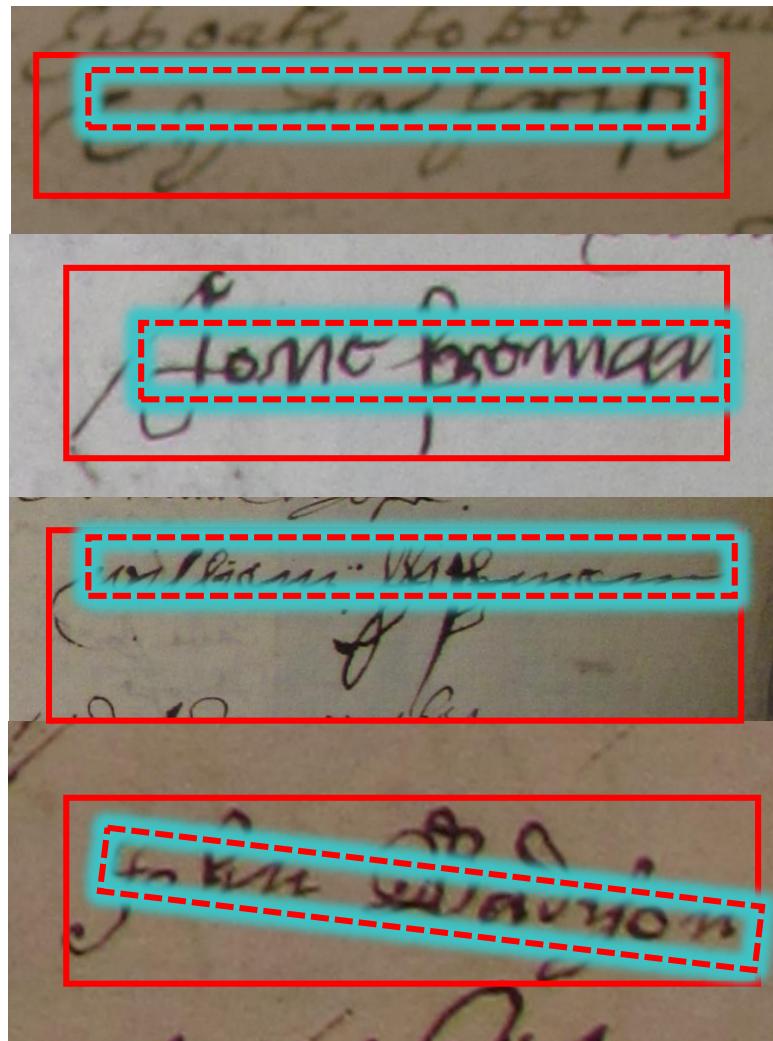
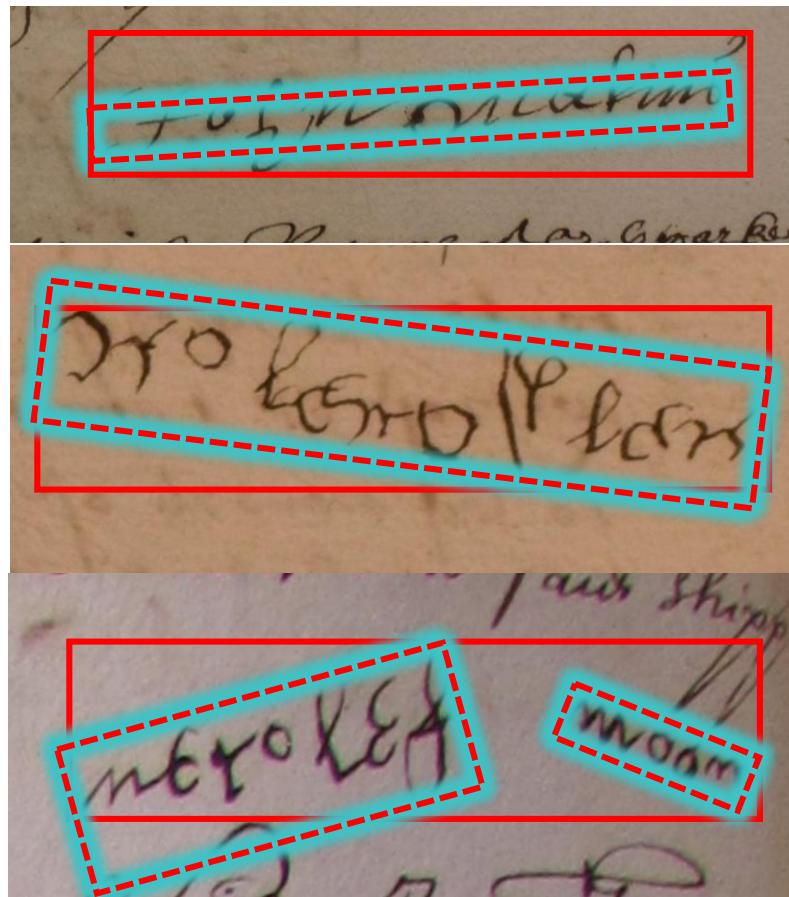
Inside boundary box: 9.0 x 1.1

Middle boundary box: 9.75 x 4.25

Outside boundary box: 12.75 x 5.75

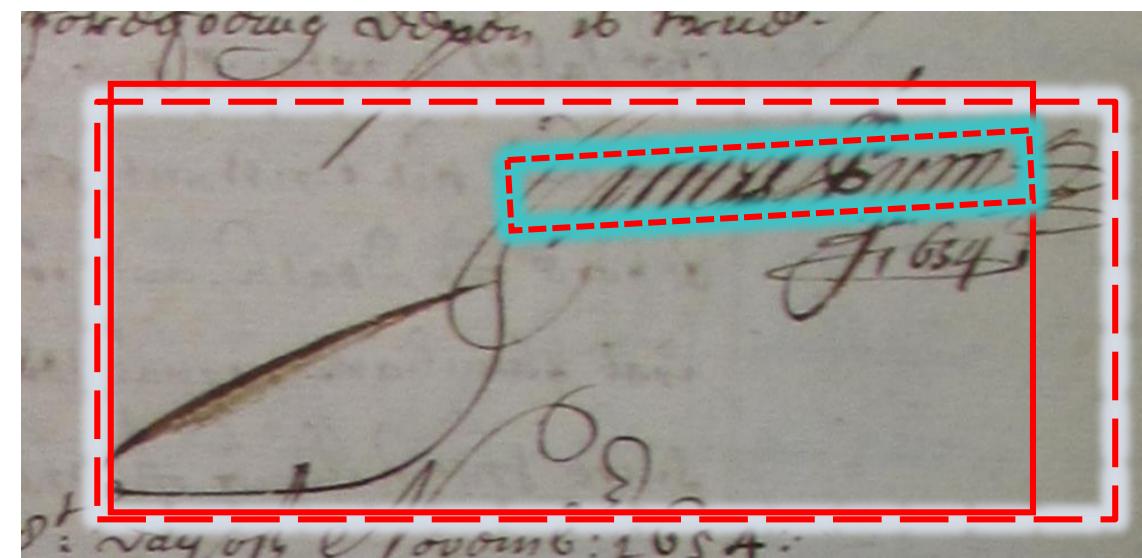
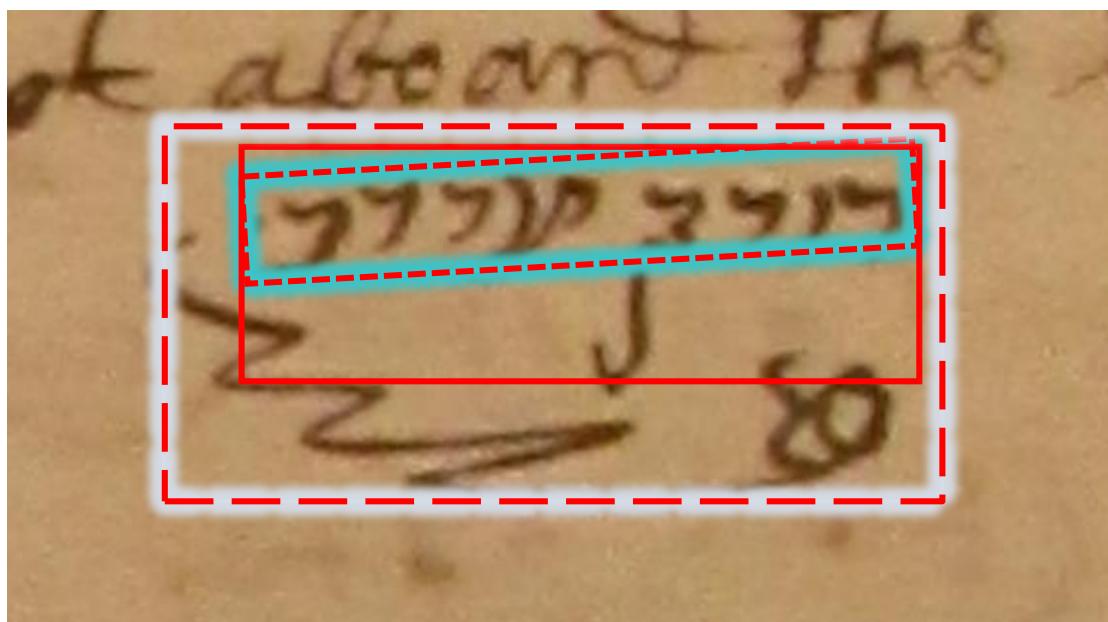
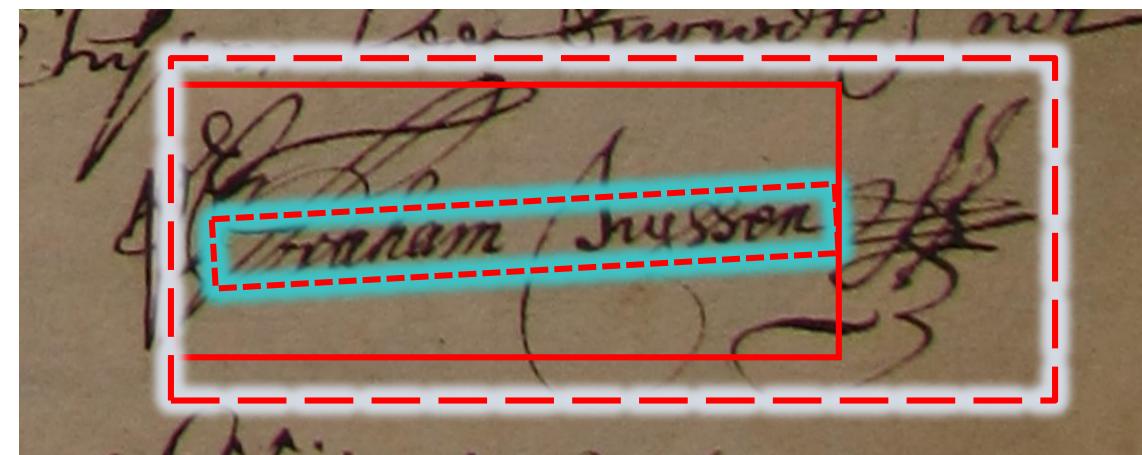
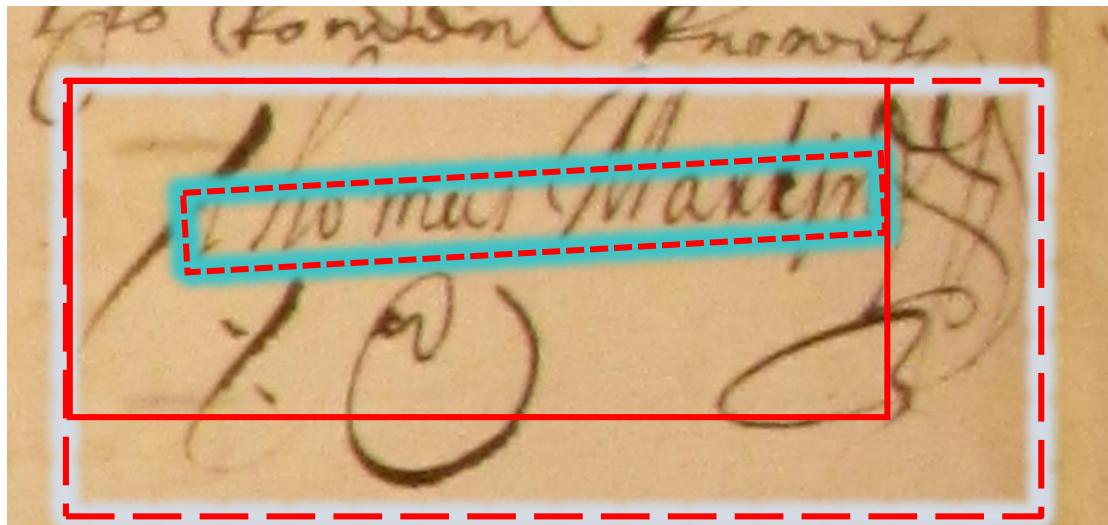
Rotation from horizontal: ca. 340 degrees

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

Legal deposition

Deposition of Mark Harrison; mariner and master; resident in Wapping, Middlesex; age 27;
Dated September 21st 1659 (TNA, HCA 13/68, ff. 1r-3r)



Machine based recognition of metadata

The 21st Day of September 1693

Examined upon the 21st day of September 1693 before me by
John Hobart Esq; a Notary Publick for the County of
Norfolk and the City of Norwich, and by
Mark Harrison of Wapping in
the County of Middle Marches aged
fifty and twenty years or thereabouts
a mariner known and examined by
the said John Hobart and by
the said George or Gresham and as
affidavit to the said George Gresham any right title
or interest he had to the said ship "Gresham" and
the delivery for which he had given him.

1. On the first night of the said afternoon the day and year before
the aforesaid ship the "Gresham" or "Morning Star" and her crew were
taken and forced on board a certain ship in the inland part of the same
in the Longship field upon the Coast of England, and was first captured
by the said ship the "Morning Star" which of late was commanded
and crew of seafarers taken by her said ship and another ship
named the "Fatale" which was commanded
and forced that two ships went in company to the service of the French
with the "Morning Star" and the "Morning Star" was never seen in sight as
long as she lay foreign. On whom the said French took
charge of the "Morning Star" after said capture and about four or five
hours of service. And so far as I can remember

On the second night of the said afternoon the said French ship, yet she had thirty three
French men on her deck and was forced and taken to the ship
abreast on or about the 25th day of February 1693 English time,
with her crew upon the English ship where to abide upon the Coast of
England within the purview and jurisdiction of the English Admiralty in
the road called "Piper's Passage" and taken up to the port of Harwich being Master
of and aboard the said "Morning Star" which was bound to the said port of
Harwich and which is the steaming place belonging to the aforesaid
ship it is now for removal service.

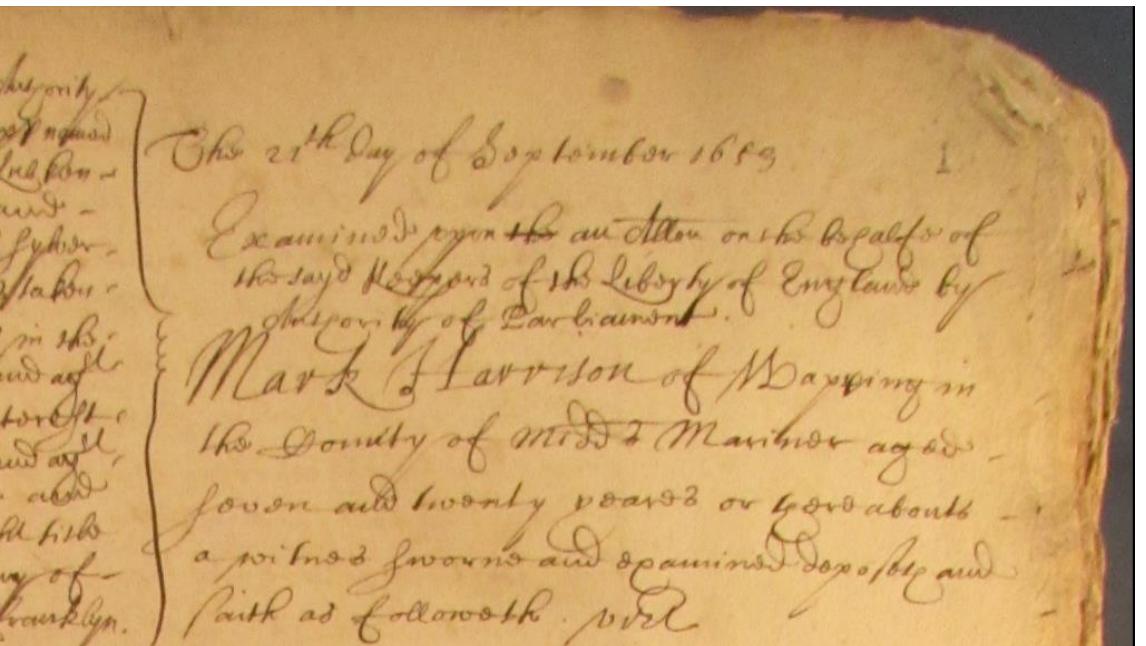
On the third night of the said afternoon the day and year before
the said 25th day of February 1693 also forced and taken to the port and
abreast of Harwich and out by Harwich port and about seven miles from
Harwich and by Harwich port to the town of Great Yarmouth the said
Morning Star being bound to the port of Great Yarmouth and was
forced to the port of Great Yarmouth and was bound to the port of Great Yarmouth
and probably bound to the port of Great Yarmouth generally because the "Morning Star"
at Great Yarmouth paid or delivered and at Great Yarmouth as well as
ports and places beyond the land and the land at the said port of Great Yarmouth
was a general and well known to all English Master and Company of the
said ship the "Morning Star". And further to the intent and meaning of this

On the fourth day of the said month of September of the said year before
was the "Morning Star" sent over by Captain of the said ship by name
and address from London to the said Master and Company of the said ship
the "Morning Star" and additional of the state of the said ship. The
ship aforesaid named "Morning Star".

The 21st Day of September 1689

Examined upon the affaile on the behalfs of
the sayd Negroes of the Liberty of Engelewood by
Mark T. Garrison of Newbury in
the County of Middlesex aged
seven and twenty years or there abouts
sworn frome and examined upon opon and
Sith 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

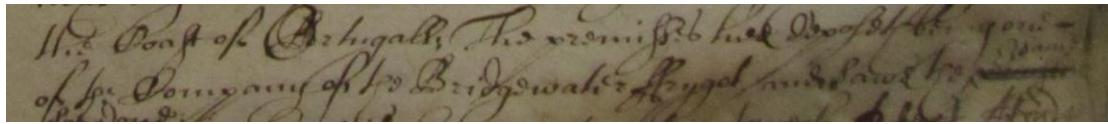
mark Harrison³ of² walking⁸ in² the county of Middlesex mariner¹⁵ aged seven and twenty years or² there⁴ about

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

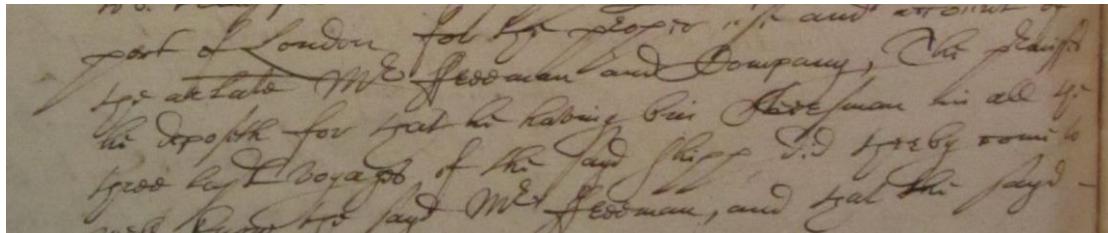
Can we use key word spotting to excavate raw metadata?

LANGUAGE DENOTING OCCUPATION



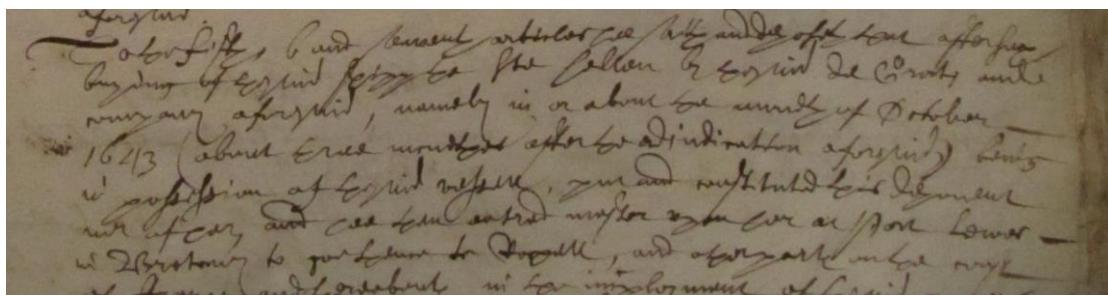
W^t Roast of Orthigall, The premissee hee deposeth
of the Companye of the Bridgewater ffrygott, and sawe her
in the same shipp in the said voyage.

"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]



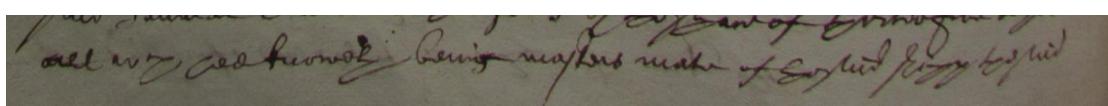
part of London for the sayd shipp and comon
for late Mr. Godman and Company, the shipp
the deponeth for that he had beene Steersman in all ye
free last voyages of the sayd shipp S. I. syngt downe
and to the sayd Mr. Godman, and that the sayd

"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]



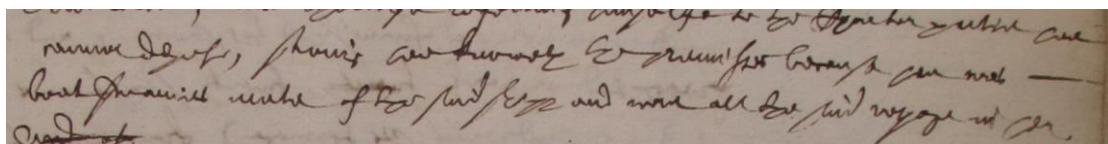
Yours.
To oblyf, and present witnessse by ande of her affter
buying of Esq^r Ffrygott the Sellen or Esq^r de Grotte, and
very my affyght, namely in or about the moneth of October
1643 (about three moneths after the adiudication aforesaid) being
in possession at Esq^r Ffrygott, and wrought bid him self
out of say and see from entred master sya shipp at Port Lewes
in Bretany to port lewe to Foggall, and afterward in the my
lasse to Looe in the moneth of Nov^r.

"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 Duff, having now knoweth Esq^r Ffrygott to be
boat swaines mate of sayd shipp and made all sayd shipp and her
crewd etc.

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



name Duff, having now knoweth Esq^r Ffrygott to be
boat swaines mate of sayd shipp and made all sayd shipp and her
crewd etc.

"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	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	Year	Estimated	names	name	last name
				Month	Year	age	name	name	name
KaggleTestSnippet_HCA_1370_f_546r.PNG	HCA 13/70	Signature	Mariner; Boatswain	47	1654	1607 John	Bicker		
KaggleTestSnippet_HCA_1370_f_571v.PNG	HCA 13/70	Signature	Mariner; Boatswain	40	1654	1625 Peter	Simonson		
KaggleTestSnippet_HCA_1370_f_596v_One.PNG	HCA 13/70	Signature	Mariner; Boatswain	30	1654	1625 Lee	Lee		
KaggleTestSnippet_HCA_1370_f_636r.PNG	HCA 13/70	Signature	Mariner; Boatswain	26	1655	1629 John	Lee		
KaggleTestSnippet_HCA_1370_f_671v.PNG	HCA 13/70	Marke	Mariner; Boatswain	26	1655	1629 John	Lee		
KaggleTestSnippet_HCA_1368_f_631v.PNG	HCA 13/68	Signature	Mariner; Boatswain	26	1655	1629 John	Lee		
KaggleTestSnippet_HCA_1371_f_27r.PNG	HCA 13/71	Initials	Mariner; Boatswain	26	1655	1629 John	Lee		
KaggleTestSnippet_HCA_1371_f_27v_One.PNG	HCA 13/71	Initials	Mariner; Boatswain	26	1655	1629 John	Lee		
KaggleTestSnippet_HCA_1371_f_27v_Two.PNG	HCA 13/71	Initials	Mariner; Boatswain	26	1655	1629 John	Lee		
KaggleTestSnippet_HCA_1368_f_640r.PNG	HCA 13/68	Signature	Mariner; Boatswain	26	1655	1629 John	Lee		
KaggleTestSnippet_HCA_1368_f_687r.PNG - CREATE HCA 13/68	HCA 13/68	Signature	Mariner; Boatswain [of the Civill Society]	26	1655	1629 John	Lee		
KaggleTestSnippet_HCA_1371_f_77v.PNG	HCA 13/71	Signature	Mariner; Boatswain	22	1655	1635 Joseph	Cappewell		
KaggleTestSnippet_HCA_1370_f_378r.PNG	HCA 13/70	Signature	Mariner; Boatswain	22	1655	1635 Robert	Shorting		
KaggleTestSnippet_HCA_1371_f_99r.PNG	HCA 13/71	Signature and	Mariner; Boatswain [of man of war]	22	1655	1635 Robert	Shorting		
KaggleTestSnippet_HCA_1370_f_484r.PNG	HCA 13/70	Signature	Mariner; Quartermaster; Boatswain	22	1655	1635 William	Conquett		
KaggleTestSnippet_HCA_1371_f_139v.PNG	HCA 13/71	Signature	Mariner; Boatswain	22	1655	1635 John	Johansen		
KaggleTestSnippet_HCA_1371_f_167r.PNG	HCA 13/71	Signature	Mariner; Boatswain [of the John and Mary]	22	1655	1635 John	Johansen		
KaggleTestSnippet_HCA_1371_f_279r.PNG	HCA 13/71	Signature	Mariner; Boatswain	41	1655	1634 Cornelius	Peterson		
KaggleTestSnippet_HCA_1370_f_546r.PNG	HCA 13/70	Signature	Mariner; Boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_571v.PNG	HCA 13/70	Signature	Mariner; Boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_596v_One.PNG	HCA 13/70	Signature	Mariner; Boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_636r.PNG	HCA 13/70	Signature	Mariner; Boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_671v.PNG	HCA 13/70	Signature	Mariner; Boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_754r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_758r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_762r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_766r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_770r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_774r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_778r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_782r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_786r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_790r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_794r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_798r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_802r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_806r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_810r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_814r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_818r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_822r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_826r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_830r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_834r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_838r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_842r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_846r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_850r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_854r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_858r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_862r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_866r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_870r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_874r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_878r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_882r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_886r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_890r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_894r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_898r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_902r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_906r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_910r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_914r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_918r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_922r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_926r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_930r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_934r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_938r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_942r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_946r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_950r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_954r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_958r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_962r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_966r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_970r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_974r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_978r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_982r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_986r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_990r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_994r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_998r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_1002r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_1006r.PNG	HCA 13/70	Signature	Mariner; Principal boatswain	34	1655	1621 Hendrick	Mathyson		
KaggleTestSnippet_HCA_1370_f_1010r.PNG	HCA								

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	1	2	11								
271-280	2			1		1	1	1		1	1	12								
281-290	1		1	2	1	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	2	1	1	1	1	1	1	12
51-60	1	1	1	1	1	2	1	1	1	1	16
61-70	1	1	2	1	1	1	1	1	1	1	11
71-80	1	1	2	1	1	1	2	1	1	1	14
81-90	1	1	2	1	1	1	2	1	1	1	19
91-100	1	1	2	1	2	2	1	2	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	1	16
461-470		1	2	2			1	1	2	1	1	8
471-480		1	1	1	1	1	1	1	1	1	1	5
481-490	1	1	1	1	1	1	1	1	1	1	1	12
491-500	1	1	1	1	1	1	1	1	1	1	1	8
Total	1	2	1	1	1	1	2	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	2	1	1	1	1	2	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	1	2	2	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	1	2	4	1	23
91-100	1	2	1	1	1	2	2	3	1	3	1
Total	1	2	1	1	1	2	2	3	1	3	165

Location of mariner signoffs

1637

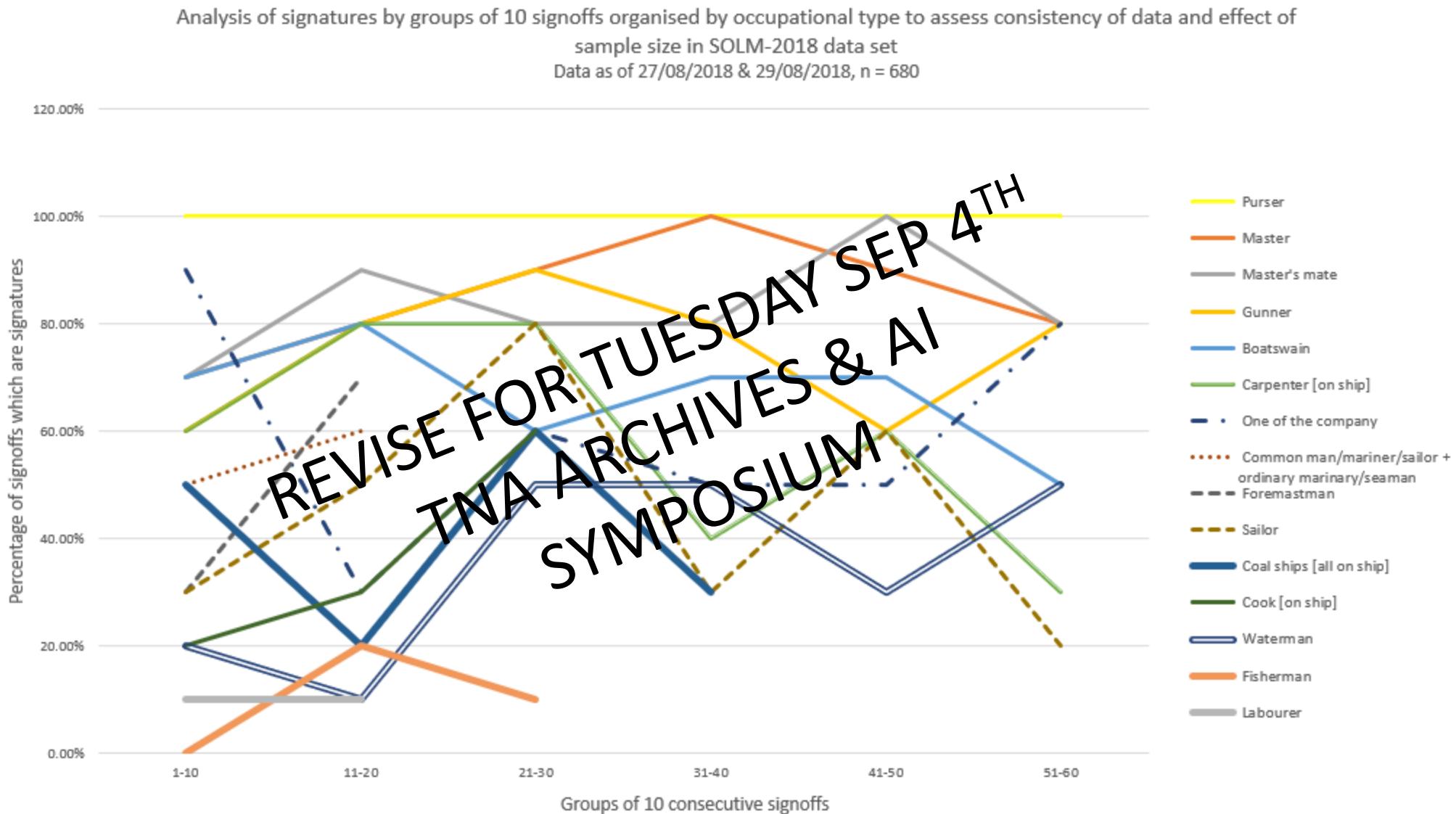
Table 1.1c: HCA 13/53 [f.1r-100v] - Signoff frequency per manuscript page & location of mariners, data from 1637

	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	1	2	4	1	23
91-100	1	2	1	1	1	2	2	3	1	3	1
Total	1	2	1	1	1	2	2	3	1	3	165

Location of merchant signoffs

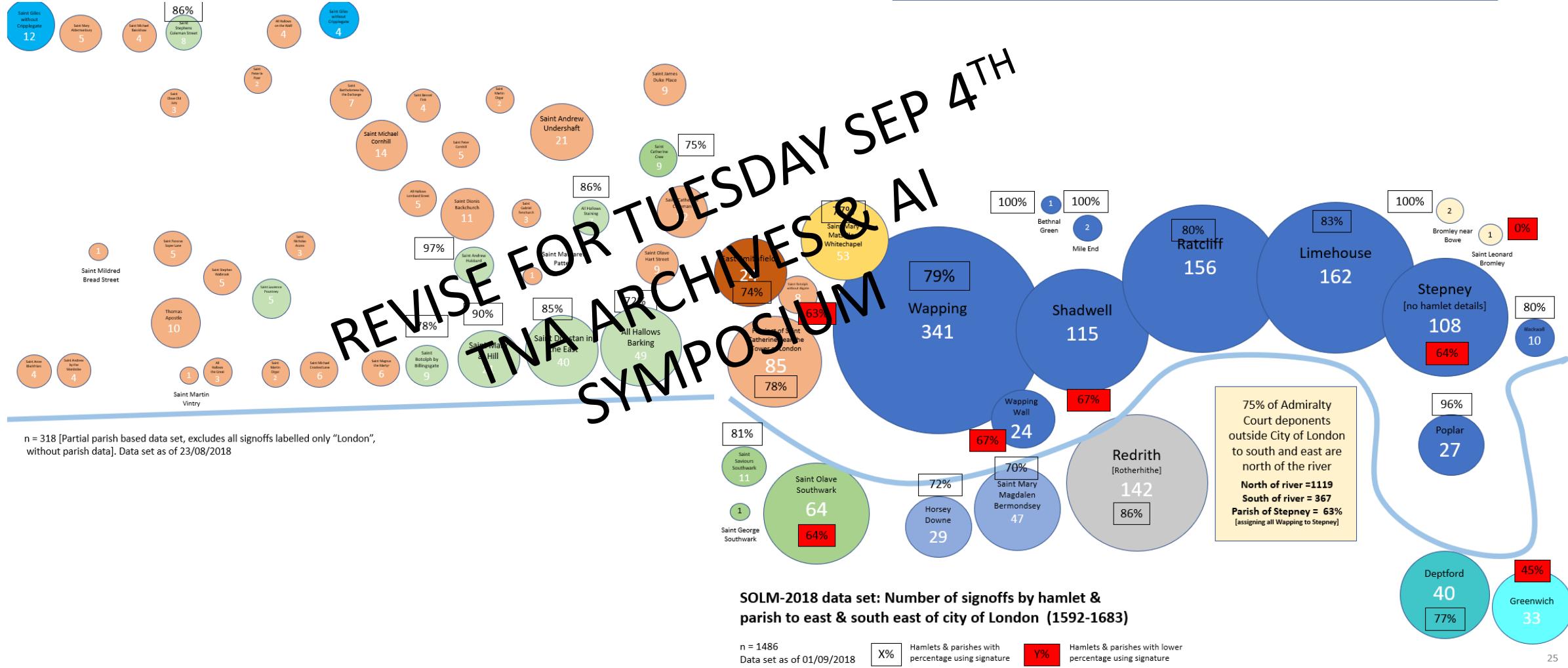
1637

Some early results

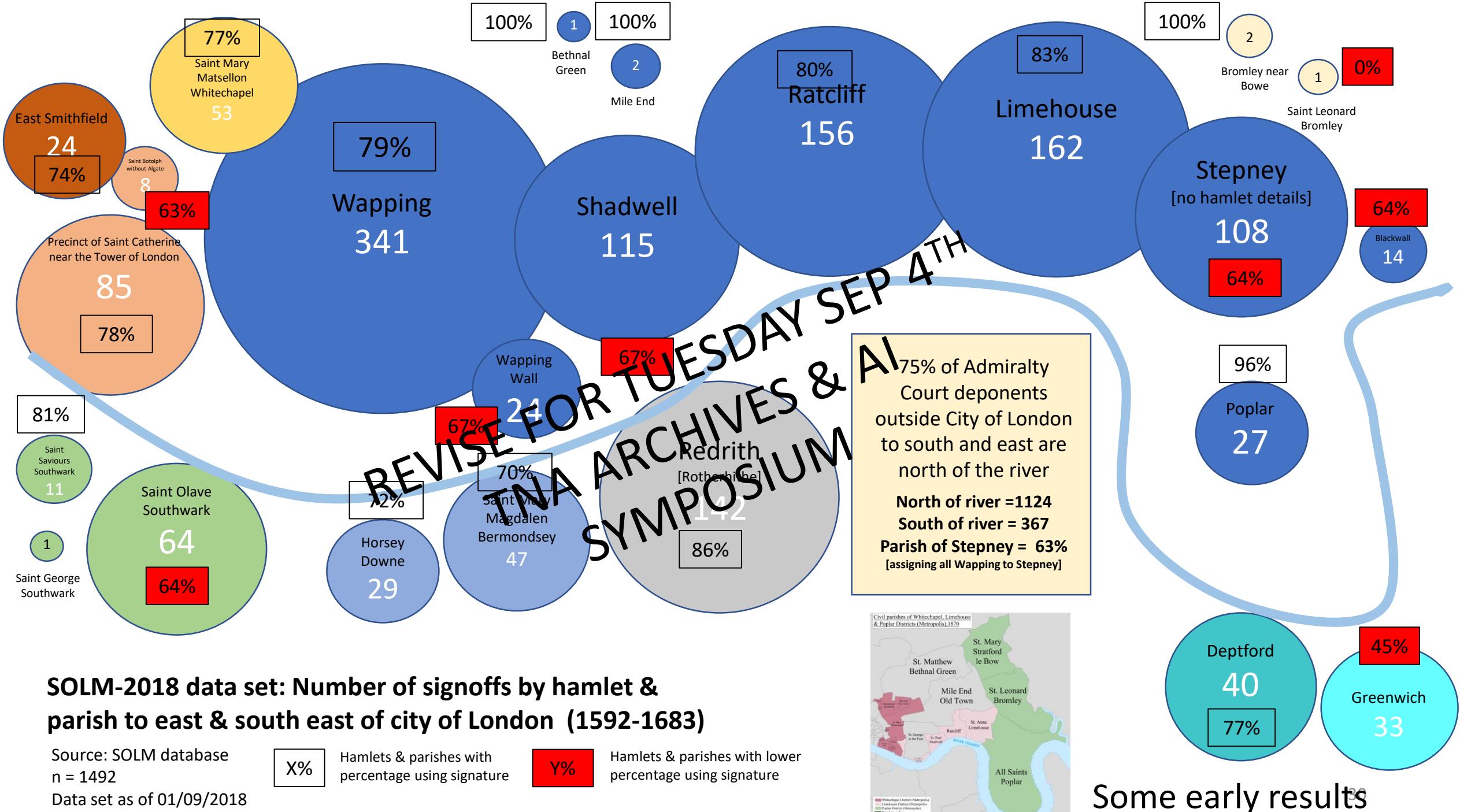


Some early results

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



Source: SOLM-2018 database



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:

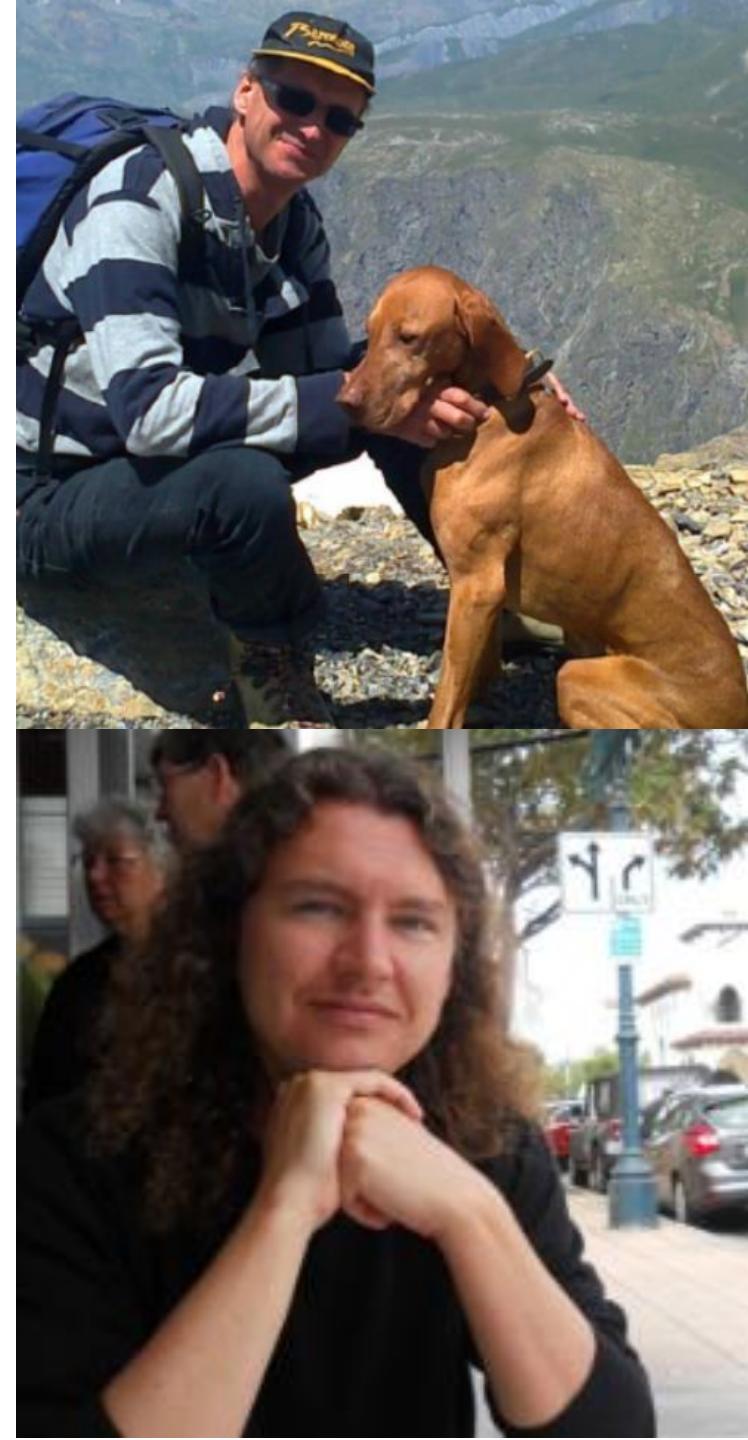
[Marinelivesorg](https://twitter.com/Marinelivesorg)

Working
with:



The National Archives

kaggle Competitions



Thanks to our one hundred and ninety-six contributors since 2012

We would like to recognise and thank our friends and supporters who have contributed to the MarineLives project, to the MapHackathon event, to the Early Modern Textiles, Garments and Dyestuffs glossary, and to the Signs of Literacy initiative, whether as volunteer transcribers, annotators, commentators, glossary contributors, software developers, advisors, interviewees, workshop participants, workshop and conference speakers, or as PhD Forum participants (in alphabetical order)

Dr Aquiles Alencar-Brayner	Thomas Davies	Viveka Hansen	M. L. Logue	Dr Benjamin Redding	Dr Samantha Thompson
Dr Kimberly Alexander	Jonathan Dent	Elaine Harrington	Jelle van Lottum	Jarmila Regulova	Roger Towner
Dr Aaron Allen	Melvyn Dresner	Dr Liam Haydon	Ismail Malik	Bethan Reynolds	Dr Alexis Truax
Elizabeth Ames	Dr Stuart Dunn	Phillipa Hellawell	Grace Mallon	Daniel Richards	Dr William Tullett
Dr Roberta Anderson	Professor Kai Eckert	Laura Herbert	Paula Marmor	Harriet Richardson	Martin Turner
Vicky Annand	Bob Egan	Dr Helmer Helmers	Simon Marsh	Andrew Richens	Oliver Turner
Dr Carolyn Arena	Eglantine	Dave Henderson	Dr Alan Marshall	Dr Mia Ridge	David Underdown
Deborah Ashby	Dr Charlene Eska	Dr Stefan Hessbrüggen-Walter	Dr Barbara McGillivray	Dr Dominique Ritzé	Rebecca Unsworth
Dr Gary Baker	Louise Falcini	Professor Tim Hitchcock	Dr Angela McShane	Dr Gavin Robinson	Dr Brodie Waddell
Gabor Bakos	Emilie-Jane Farrimond	Dr Philip Hnatkovich	Angela Middleton	Glen Robson	Rebecca Want
Iona Bartzi	Dr Karwah Fatah-Black	Rachel E. Holmes	John Miller	Dr Helen Rogers	Samuel Watson
Rachel Bates	Dr Amelia Fay	Jeffrey Hopper	Anne Mills	Dr Jill Rogers	Dominic Webb
Rowan Beentje	Dr Janet Few	Dr Jenni Hyde	Kate Morant	Axel Hee Rømer	Ken Whittaker
Nga Bellis-Phan	Christian Folgar	Dr Tom Irvine	Matthias Müller-Prove	Celine Romano	Jill Wilcox
Michael Bennett	Sara Fox	Steve Ives	Professor Steve Murdoch	Dr Margaret Schotte	Peter Williams
Amber Berkeley	Dr Anthony Firth	Alex Jackson	Dr Shavana Musa	Steven Schrum	Royline Williams-Fontenelle
Dr Richard Blakemore	Erin French	Stefan Jäaggi	Maurice Nicolson	Andrei Seleznov	Ad van der Zee
Lior Blum	Dr Ian Friel	Elin Jones	Stephanie Ostrich	Laura Seymour	Dr Kathrin Zickermann
Ffion Boyd	Professor Cheryl Fury	Sue Jones	Frances Owen	John Sheridan	Dr Suze Zijlstra
Katie Broke	Steve Garnett	Menno Jonker	Gordon O'Sullivan	Dr Deborah Sherlock	Dr Cäcilia Zirn
Dr James Brown	Dr Perry Gauci	Dr Sam Kaislaniemi	Dr Katherine Parker	Dr Rainer Simon	and the ever helpful but
Dr Andy Burn	Marja Geesink	Ross Keel	Tim Parry-Williams	Ida Sjoberg	anonymous @_mapnut
Elio Calcagno	Jaap Geraerts	Dr Patricia Keller	David Pashley	Petr Sloup	
Joshua Calloway	Helen Good	William Kellett	Dr Michael Pearce	Dr Edmond Smith	
Michelle María Early Capistrán	Dr Jamie LH Goodall	Sara J Kerr	Dr Cathryn Pearce	Tilly Smith	
Rachel Carter	Guy Grannum	Heather Knight	Elizabeth Pimblett	Dr Stephen Snelders	
Cynthia Chin	Colin Greenstreet	Iris Kramer	Dr Sophie Pittman	Professor Humphrey Southall	
Nicola Clarke	Francesca Greenstreet	Dr Marcin Krygier	Professor Simone Paolo	Dr Craig Spence	
Freyalyn Close-Hainsworth	John Kuhn	John Lambert	Ponzetto	Daniel Stewart-Roberts	
Dalton Coker	Justin Grierson	Dr Craig Lambert	Mark Ponte	Dr Hannah Steyne	
Dr Giovanni Colavizza	Tracey E Griffiths	John Layt	Dr Peter Pridal	Ian Stoll	
Dr Justin Colson	Dr Adam Grimshaw	Deborah Leem	Dr Jo Pugh	Michael Stoner	
Sam Cottrell	Karen Gunnell	Dr Sjoerd Levelt	Seif Al Rashidi	Dr Chad Stolper	
Kevin Daniells	Yerevag Hagopian	Amalia Skarlatou Levi	Dr Peter Rauxloh	Peter Taylor	
Thierry Daunois	Dr Mark Hailwood	John Levin	Patrizia Rebullia	Dr Carl Thompson	
Dr John Davies	Finn Halligan	M. L. Logue			

Discussion

For discussion at Archives & AI symposium, Tuesday, September 4th, 2018

	2018	2019	2020	2021	2022	2023
Q1		Historical literacy network meeting (1)				
Q2	IIIF Conference Staatsarchiv Amsterdam workshop DH Benelux	Historical literacy network meeting (2)				+ <div style="border: 1px solid blue; padding: 10px;"><p>Machine learning enabled manuscript archivists</p><p>Image processing</p><p>Natural Language Programming</p><p>Key word spotting</p><p>Controlled vocabularies</p><p>Programmable decision rules</p><p>IIIF visibility</p></div>
Q3	Archives & AI Sheffield DH Congress	Kaggle competition	Huntington library visit			
Q4	Kaggle visit Stanford University visit					
	SOLM-2018	SOLM-2018	SOLM-2022	SOLM-2021	SOLM-2022	SOLM-2023

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

INSERT SLIDE

Reading list