

DRAFT**Performances of Ocropolis/Tesseract on 5 pages extracted
from Aug., De Civitate Dei, Venetiis 1475**(<<http://www.archive.org/download/augustinidecivitatemdei00jensuoft/augustinidecivitatemdei00jensuoft.pdf>>)

by

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Method for evaluation of performances: 5-fold cross-validation.

Procedure: 5 trainings sets, performed on all pages but one, moving from first to last page. The page excluded from each set is parsed with the training data.

| OCR performances | p. 200 | p. 201 | p. 408 | p. 409 | p. 600 | average | avg w/o outliers |
|------------------------------------|--------|--------|--------|--------|--------|---------|------------------|
| matches (m) | 1226 | 1429 | 1215 | 1516 | 1482 | 1374 | 1379 |
| substitutions (s) | 373 | 161 | 400 | 143 | 148 | 245 | 227 |
| insertions (i) | 103 | 26 | 83 | 37 | 27 | 55 | 49 |
| deletions (d) | 36 | 32 | 17 | 15 | 17 | 23 | 22 |
| # of chars in ocr = m+s+i | 1702 | 1616 | 1698 | 1696 | 1657 | 1674 | 1684 |
| # of chars in ground truth = m+s+d | 1635 | 1622 | 1632 | 1674 | 1647 | 1642 | 1638 |
| # of edit operations= m+s+i+d | 1738 | 1648 | 1715 | 1711 | 1674 | 1697 | 1700 |
| missing rate = d/(m+s+d) | 2.20% | 1.97% | 1.04% | 0.90% | 1.03% | 1.43% | 1.35% |
| precision (p) = m/(m+s+i) | 72.03% | 88.43% | 71.55% | 89.39% | 89.44% | 82.17% | 83.28% |
| recall (r) = m/(m+s+d) | 74.98% | 88.10% | 74.45% | 90.56% | 89.98% | 83.62% | 84.36% |
| accuracy = m/(m+s+i+d) | 70.54% | 86.71% | 70.85% | 88.60% | 88.53% | 81.05% | 82.03% |
| f-score = 2*p*r/(p+r) | 0.73 | 0.88 | 0.73 | 0.90 | 0.90 | 0.83 | 0.84 |

worst performance in red, best performance in blue, generic outlier in gray

Images have been preprocessed in different ways (more or less contrast, scaling, etc.). Best performances are achieved with:

1. copy from .pdf zoomed at 150% to GIMP
2. gray scale reduction
3. scale image: 200% Interpolation Sinc - Resolution 72
4. scale image: 50% Interpolation Sinc - Resolution 300

Double scaling and change of resolution apparently smoothes the edges, losing information from the original image and interpolating aligned points.

Analytical reports are provided in the next pages.

N.B.

Odd characters like “ż” for “et” can be easily transcoded with the correct unicode signs for abbreviations, according to the Medieval Unicode Font Initiative (MUF) directives (<http://www.mufi.info>). Here they are used only for practical reasons of rendering with a monospaced font.

At <http://www.himeros.eu> it is possible to download all the data.

Report # 1 on page 200 (with data training from pp. 201, 408, 409, 600)

total # of chars in ocr: 1702

total # of chars in ground truth: 1635

total # of matching chars: 1226

total # of substitutions: 373

total # of insertions: 103

total # of deletions: 36

total # of edit operations: 1738

precision [matches/(matches+subs+inss)]: $1226/(1226+373+103)=72.03\%$

recall [matches/(matches+subs+dels)]: $1226/(1226+373+36)=74.98\%$

accuracy [matches/(matches+subs+inss+dels)]: $1226/(1226+373+103+36)=70.54\%$

similarity rate [average of 1-normalized_edit_distance]: 69.06%

Alignment:

quomud fuptu nerao eēquāerao tenoa čoc

||||+#|#||##||++##|~#|||++#||~#||#||#|| [20/(20+13+5+0)=20/38=52.63%]

quom°ð ſupra n°os ē quā°ðo z nos hoc

fnrnetamoc ata tradet nifi miš°r eeēmu?

+#####|#|||+###||||#||||-~#|||#~ [19/(19+18+2+1)=19/40=47.50%]

°sumus:nec ita °eſſet niſi miſeri eēmuſ:

cuuiteri coipora aereri quanle eſtimāD

+#|++##||#||~#||||+#||||#||||||#| [23/(23+10+5+0)=23/38=60.53%]

°Qu°od coórpoře aere°a quanti eſtimā-

dom eſt:cumorani eoipoři preferatir

|#|||||||##||#||#||||||||||#| [28/(28+7+0+0)=28/35=80.00%]

dum eſt:cum omni coórpoři preferatur

aic qualcufunte natu°m:Et iudeēlijudia

|~#|||||+##||#||||-#||||+###||||+#|# [24/(24+12+3+1)=24/40=60.00%]

aie qual°iſcunqz natura:Et i°ð řligi°ois

cu°DNA qun elebecur ex animn nequaen

||-##||#|+#||#||||+#||||#|||||+# [25/(25+8+2+1)=25/36=69.44%]

cultus qui °debetur ex animo nequa°č

dobeetur ei°rti que anirno eſt lcferiot.

|#||#||||-|#||||+#||||#||||#| [30/(30+7+1+1)=30/39=76.92%]

debetur ei rei que ani°mo eſt inferio'.

ceor̄fo °leinaer°uld qua domonum trade

+#||||-#||#||-#||#||#||||+##| [22/(22+11+2+3)=22/38=57.89%]

°Por̄fo ſi inter illa que demonum °eſſe

elicic umnumerll uirtutem: fopienciā:

+#||||#||#||||#||||||#||||#||| [27/(27+9+1+0)=27/37=72.97%]

°dicit annumerēt uirtutem: ſapientiā:

felilecelramui čec ees cliceret čabeē cuž

||||+#####|##||#||||+#||||#||+|||| [26/(26+12+3+0)=26/41=63.41%]

feli°citatem:z hec eos °diceret hab°ē cuž

elja eterna atte communia°: profecto

+#||#||||||#||||||-||||||| [30/(30+4+1+1)=30/36=83.33%]

°djs eterna atqz communia : profecto

altquel elicet exoptanelurn mngnite
||#||+#+|||||+#+#||#||#||# [26/(26+8+4+0)=26/38=68.42%]
aliqui°d °diceret exoptan°du°m magniqż

pendendurō:nec sic ea tamen propter
|||||+#+|||||#|||||+#+#||# [33/(33+2+1+0)=33/36=91.67%]
pendendu°z:nec sic eos tamen propter

ċec tanqunm eleum colere eleber eēua:
#|||||+#+|||||+#+#|||+||# [28/(28+5+4+0)=28/37=75.68%]
hec tanquam °deum colere °deber°ēus:

śiteri polena ipfum a quo dec°illoa acce
|++|+#+||||##|#|||+#+#|||+#+#||| [28/(28+8+3+1)=28/40=70.00%]
ś°e°d potius ipśum a quo hec illos acce

piše iuiścmeta la cuuudto mlceta nunc
||#||##|#|+#+#|||+#+#||| [18/(18+14+6+0)=18/38=47.37%]
pissé nośsem°us. °°Quāto m°inus nunc

čoiurē eliumo aereri dāgna śunt ani-
#|##||##|+#+#|||+#+#||| [25/(25+10+1+0)=25/36=69.44%]
honore diuino aere°a digna śunt ani-

malranael čoc rutionnles ut mifera eeē
||#|#|+#+#|#|||#|#|||+#+#||| [27/(27+9+2+0)=27/38=71.05%]
malia:a°d hoc rationalia ut mišera °eeē

po°ēnt:ad čoc pa°ēna ut rmfera finr:
||-#|||#|||---#|||##||#||# [25/(25+9+0+4)=25/38=65.79%]
pośśint:ad hoc paśśiuia ut mišera śint:

nd čoc eterna ut mrśeriam śuā flct.eē š
#||#|||||#|||||+#+#|||+#+#||# [29/(29+8+2+0)=29/39=74.36%]
ad hoc eterna ut miśeriam śuā f°iniř ň

peraēnt?cuuapropť ut omittažcris iut
|####||~+#|||||+#+#|||+#+#||| [21/(21+13+2+0)=21/36=58.33%]
pośśint:°Quapropť ut omittaž° cęta ž

čoc śolum pertiactem en iubifcum ele
#|||||+#+#|#|||||+#+#||#|||+#+# [27/(27+7+2+0)=27/36=75.00%]
hoc śolum pertractem °c nobiścum °de

mones elixici čabere commune: icā ešt
|||||+#+#|#|||||+#+#||#||| [30/(30+4+3+0)=30/37=81.08%]
mones °dixi°t habere commune: i°d ešt

animi°paliamnes fieramnia quatuā ele
|||||-||##|+#+#|||+#+#|||+#+#||| [26/(26+8+1+1)=26/36=72.22%]
animi paśśiones śi° omnia quatuō ele

menca śuēt aiectlibuf plena śunt:immä
||#||||#||~+#+#|||||+#+#|||+#+#||# [28/(28+7+2+0)=28/37=75.68%]
menta śuis aī°alibus plena śunt:immō

tolibu°fignrś -ŕ aer : moeculibo aqeta štō
|#||||-#||#|+#+|||||+#+#||#||#||+#+#||+~ [26/(26+10+5+1)=26/42=61.90%]
talibuś igniś °z aer°: morťalibū aq°ua °z°

ťra: quero cur animi čemumū°pa°ēoD
|||||||||+#+#|||+#+#||#|||+#+#||# [27/(27+5+0+3)=27/35=77.14%]
ťra: quero cur animi demonū paśśio-

num turbeliś -ŕ temptradatnbū agiranle
|||||||||+#+#|||+#+#||#|||+#+#||# [27/(27+9+2+0)=27/38=71.05%]
num turbeliś °z temp°eśtatiibū agitentť

ceerturbatio enim ešt que grece pis
+#|||||||||+#+#|||+#+#||#|||+#+#||# [31/(31+3+1+0)=31/35=88.57%]
°Perturbatio enim ešt que grece pa-

tōcōšiaCicur:uncle ſilla voluit uocare
|#|-##~|#|||||+#||#||||||||| [28/(28+7+1+1)=28/37=75.68%]
thoſ dicitur:un°de illa voluit uocare

unummo paſſua : quia uerbum cle úbo
#+#||||#||#+|||||||||+#|||| [28/(28+5+3+0)=28/36=77.78%]
an°imo paſſiuə: quia uerbum °de úbo

patčoſ°pa°ēo clicētuř:mcutuſantiqř eud
|||#||-|-###|||+#||#||+#[[20/(20+14+2+2)=20/38=52.63%]
pathoſ paſſio dicētuř:m°otuſ animi °cő

tra rationemjCr̄r ergo funt°i°uli°anir
|||||||||###||||#||-|-#~|-||# [26/(26+9+0+4)=26/39=66.67%]
tra rationem. Cur ergo ſunt iſta ī ani-

miſ°čemonum:que in pecocicerbuf non
|||-#|||||||||#||++||#||| [28/(28+3+3+1)=28/35=80.00%]
miſ demonum:que in pecorí°°buſ non

funlecuuonium ſiqu°þ °lcpecora ftiqtû
#+###||#||||-#||-#||||~#|+#+#[[19/(19+13+3+2)=19/37=51.35%]
ſun°t?Quoniam ſiquid in pecoré °ſi°mi

le apparct nud eēperturbaatu:quia non
||||||#|||+#|-#|||||+||#||||| [31/(31+5+2+0)=31/38=81.58%]
le appetat n°ō ē perturb°atio:quia non

eſt cudtra raleonem qua pecora careēt.
|||||+#||||#|||||||||+||| [33/(33+3+2+0)=33/38=86.84%]
eſt c°ōtra rationem qua pecora car°ēt.

itān čominibō autež ut ednt iſte pertur-
~++||#|||||||||#||||||||| [34/(34+4+2+0)=34/40=85.00%]
I°°n hominibō autež ut ſint iſte pertur-

ba°uaneſtfueit čoc ſtult°uia aut miſiaj
||-#||||#||#||||-#|||||#||# [28/(28+9+0+2)=28/39=71.79%]
bationeſ:facit hoc ſtultitia aut miſia.

Nudelum cntiq ſumna in illa perf°tuio
|#+|||+|#+|#|||#|||||+||| #|||+#[[26/(26+7+3+1)=26/37=70.27%]
Nôd°um en°im ſumus in illa perfectio

ne fapieēcicere beat°uque nobiſ ab čac mud
||#|||+|#+|#|||#|||||+||| #|||+#[[31/(31+5+5+1)=31/42=73.81%]
ne ſapi°ēti°°e beati:que nobiſ ab hac m°ō

talitare liberatt.lauin fine praramirtiture
|||||#|||||+|+###|||||+||#||#|||# [32/(32+7+4+0)=32/43=74.42%]
talitate libera°t°iſ in fine p°°romittitur.

beof uero °þeo elituni iſ°d̄ perturbis
#||#||||-#|||+#||#||| -#|||||## [26/(26+9+1+2)=26/38=68.42%]
Deoſ uero ideo °dicunt iſtaſ perturba-

°rmneſ non perpeti: quia non folum
-##|#|||||||||#|||||#||| [29/(29+4+0+1)=29/34=85.29%]
tioneſ non perpeti: quia non ſolum

erarni uengm etiam berin funt. Eufdā
|##||||#|||||##|#|||#||| [25/(25+11+0+0)=25/36=69.44%]
eterni uerum etiam beati ſunt. Eaſdē

quippe anlmtrad raleona°ecfetiam iliciūof
|||||#|++|#||#||-#|||+|||#||| [26/(26+8+6+1)=26/41=63.41%]
quippe anim°°aſ rationaleſ etiam °°oſ ipoſ

Report # 2 on page 201 (with data training from pp. 200, 408, 409, 600)

total # of chars in ocr: 1616

total # of chars in ground truth: 1622

total # of matching chars: 1429

total # of substitutions: 161

total # of insertions: 26

total # of deletions: 32

total # of edit operations: 1648

precision [matches/(matches+subs+inss)]: $1429/(1429+161+26)=88.43\%$

recall [matches/(matches+subs+dels)]: $1429/(1429+161+32)=88.10\%$

accuracy [matches/(matches+subs+inss+dels)]: $1429/(1429+161+26+32)=86.71\%$

similarity rate [average of 1-normalized_edit_distance]: 83.27%

Alignment:

plexunt ſeneritate legū: ſi opera funt
|||||-||#||||| -||||| #||| [34/(34+2+0+2)=34/38=89.47%]
plexunt ſeueritate legū: ſi opera ſunt

numinum colentorúm? An forte iſtaſ
||||#||| -~||| ~||| [30/(30+3+0+1)=30/34=88.24%]
numinum colenðorúm: An forte iſtaſ

legos chriſtian°tinſtitue°mnt: čbū ſmef
|||#||||| -#||||| -#||||| -#||# [30/(30+6+0+3)=30/39=76.92%]
leges chriſtiani inſtituerunt: čbū arteſ

magice puniuntur: ſecundum quem°
||||||||| - [31/(31+0+0+1)=31/32=96.88%]
magice puniuntur: ſecundum quem

aliū fenfumenifi c hec maleficia gene
||||#||#||#||||| - [33/(33+4+0+0)=33/37=89.19%]
aliū ſenſum: niſi c hec maleficia gene

ri humano pni°nofa ſe°ñ dubiū ē? Ait
||||||| -#||#||# -||||| ~||| [28/(28+5+0+2)=28/35=80.00%]
ri humano ſnitioſa eē ñ dubiū ē: Ait

poea-clariſſirnus. IIeſtō tara deoscgi
|||#|~||||| +#||#||#||||| +## [28/(28+8+2+0)=28/38=73.68%]
poeta clariſſi°mus. Teſtō cara deos°: z

te°germana: tuūqž Dulce caput magg-
||-||||| -#||||| +#||#||#||||| +## [32/(32+1+0+1)=32/34=94.12%]
te germana: tuūqž Dulce caput magi-

cas °muitā accingier arxes. °Illud ēt qo
||||-#||||| -#||||| ~ [34/(34+3+0+2)=34/39=87.18%]
cas inuitā accingier artes. Illud ēt qo

alio loco de his artibū dacctt . Aiqž ſa-
||||||||| +#||#||#||||| [36/(36+3+2+0)=36/41=87.80%]
alio loco de his artibū d°icit°. Atqž ſa-

tas° alio uldi cradueē meſſes . Coqž
|||-||||| #||#||||| +## [27/(27+6+1+1)=27/35=77.14%]
tas alio uidi traducē meſſes°. Eo c

bac peſtifera fcelcrataqž ooctriacfruc-
#||||||||||#|||#||||||#||||~|#|||| [33/(33+6+0+0)=33/39=84.62%]
hac peſtifera ſcelerataqž ḫoctrīa:fruc-

tū altēī sliss °ims trauifcrri ḫhibētI
~||||#||-||#||#||-#||||#||#||||~# [26/(26+12+0+2)=26/40=65.00%]
tū aliē ī alias tras tranſferri ſhibēt:

nōno in°dundetim tabulis. ĩ. rōart. oruž
||||#||-||#||#||||||||||++#||~| [29/(29+5+2+1)=29/37=78.38%]
nōne in duodecim tabulis. ĩ. rōa°noruž

antiquiſſimas lcgibus cicero comme-
||||||||#||#|||||||||||||| [33/(33+2+0+0)=33/35=94.29%]
antiquiſſimis legibus cicero comme-

morat eē canfcriptiā: ž ei qui hoc fece-
||||||||#||#|||++~|||||||||| [34/(34+4+2+0)=34/40=85.00%]
morat eē conſcript°ū: ž ei qui hoc fece-

rit ſupplciū cōſtitutā? Poſlretno iþe
||||||#||-||||#~||#||+#|| | [30/(30+6+1+1)=30/38=78.95%]
rit ſuppliciū cōſtitutū: Poſtre°mo iþe

apuleiu°nnunquid apud°iudices chři-
|||||-#||||||| -|||||||~| [31/(31+2+0+2)=31/35=88.57%]
apuleius:nunquid apud iudices chři-

ſtianos de magicis srtbus accuiatuf
||||||||||||#||#||||||#||# [32/(32+4+0+0)=32/36=88.89%]
ſtianos de magicis artibus accuſatus

eſt?Quas utiqž fibi obiectas fi dtuiaš
|||~||||||||#||||||#||#||| [34/(34+4+0+0)=34/38=89.47%]
eſt:Quas utiqz ſibi obiectas ſi diuiaš

ž pias eſſe noueraun dectiaet poteſta-
||||||||||||||||#||||#||| [28/(28+9+1+0)=28/38=73.68%]
ž pias eſſe nouerat:ž diuia°r poteſta-

tum operibus congruas : non folum
||||||||||||||+|+||#|| | [30/(30+1+2+0)=30/33=90.91%]
tum operibus congruas°:°non ſolum

eas cōfiteri debuit:fed ēt°ßfiteri:leges
||||||||||||#||| -#|||||| | [37/(37+2+0+1)=37/40=92.50%]
eas cōfiteri debuit:ſed ēt ſiteri:leges

culpans potius quacbus hsc prohibe-
||||||||||+#||#||| [32/(32+2+1+0)=32/35=91.43%]
culpans potius qu°ibus hec prohibe-

rentur °udamnanda putau-enrurtč ha
|||||-#|||||||+#||#||#||| [28/(28+4+1+1)=28/34=82.35%]
rentur ž damnanda puta°rentur:č ha

beri miranda ž ueneranda opoŕteret.
||||||||||||||||| - [35/(35+0+0+1)=35/36=97.22%]
beri miranda ž ueneranda opoŕteret.

Ita enim uel fententiaq ſuā perſuadēt
||||||||#||| #||||||| [35/(35+2+0+0)=35/37=94.59%]
Ita enim uel ſententiaž ſuā perſuadēt

iudicibū : vel ſi illi ſeclndum. iniquas
|||||||+|+||||||||||+#|||+|||||| | [36/(36+1+4+0)=36/41=87.80%]
iudicibū:°vel ſi illi ſec°undum° iniquas

leges ſaperent: eūqž talia predicanuez
|||||||||+||||||||||#|| [37/(37+1+0+0)=37/38=97.37%]
leges ſaperent: eūqž talia predicanetz

atqž laudantem mor̄te mulctsrent dl
|||||||||||||#|||||# [32/(32+2+0+0)=32/34=94.12%]
atqž laudantem mor̄te mulctarent di

gna anime fll°ms dem̄es oona repen
|||||||#||-#|||||#||||| [30/(30+3+0+1)=30/34=88.24%]
gna anime illius dem̄es õona repen

derentepro quotum diuinis operibus
|||||#|||||#||||| [32/(32+2+0+0)=32/34=94.12%]
derent:pro quořum diuinis operibus

predicandis humanē uitā fibi adimi
||||||||#||||#||||| [32/(32+2+0+0)=32/34=94.12%]
predicandis humanā uitā ſibi adimi

non timerent. Sicut maatyres noſtri
|||||||||#||||| [34/(34+1+0+0)=34/35=97.14%]
non timerent. Sicut martyres noſtri

tū eis pro crie objcētur chriſtiana fe-
#|||||~|||||-|||||#|| [35/(35+3+0+1)=35/39=89.74%]
cū eis pro cr̄ie objcētur chriſtiana re-

ligio : qua nouerant ſc fieri ſaluos ź
||||+|||||#||||| [36/(36+1+1+0)=36/38=94.74%]
ligio°: qua nouerant ſc fieri ſaluos ź

glor̄ oſiſſimos in eterntutunon eaž ne
|||||~|||||+|##||||| [33/(33+3+1+0)=33/37=89.19%]
glor̄ oſiſſimos in etern°um:non eaž ne

ganoo temporales penas euadcre de-
|||#|||||#||||| [32/(32+2+0+0)=32/34=94.12%]
ganđo temporales penas euadere de-

legerunxfed potius confisenoo: profi
|||||~#|||||#||#+||||| [32/(32+4+1+0)=32/37=86.49%]
legerunt:ſed potius confitenđo:° profi

tenoo:predicanoo: ź pro bac oia fide
|||#|||||#||||| [32/(32+3+0+0)=32/35=91.43%]
tenđo:predicanđo: ź pro hac oia fide

liť for°merqž toleranoa: ź c°õpia. ſecurí
|||||-#|||||#||-|#||~||||| [31/(31+5+0+4)=31/40=77.50%]
lit fortiterqž tolerando: ź cū pia ſecurí

cate mot.imuo: legea qířibú -phibebăť
|||||####|+|||#||+#||+~|||~ [24/(24+10+3+0)=24/37=64.86%]
tate mořienđo:° leges q'uibú °šibebăť

e°mbeſcē cōpulerüetmutariqž fecerūt.[°]
|-#|||||#||-#||||| [32/(32+3+0+2)=32/37=86.49%]
erubeſcē cōpulerüt:mutariqž fecerūt.

Hnius autem philofophi plutonici
|#|||||#||||| [29/(29+3+0+0)=29/32=90.62%]
Huius autem philoſophi platonici

copiofeſſima ź°dCſertiſſirna e°nat oio:
||||#||-#|||||+#||-#||#|| [30/(30+6+1+2)=30/39=76.92%]
copioſiſſima ź diſertiſſi°ma extat ořo:

Report # 3 on page 408 (with data training from pp. 200, 201, 409, 600)

total # of chars in ocr: 1698

total # of chars in ground truth: 1632

total # of matching chars: 1215

total # of substitutions: 400

total # of insertions: 83

total # of deletions: 17

total # of edit operations: 1715

precision [matches/(matches+subs+inss)]: $1215/(1215+400+83)=71.55\%$

recall [matches/(matches+subs+dels)]: $1215/(1215+400+17)=74.45\%$

accuracy [matches/(matches+subs+inss+dels)]: $1215/(1215+400+83+17)=70.85\%$

similarity rate [average of 1-normalized_edit_distance]: 69.41%

Alignment:

feminc cõmēcuõf vnõ f° ūia:neptis. °Sž
|||||#|||||###|||#||-#||||||| -|| [27/(27+7+0+2)=27/36=75.00%]
femine cõmēořat̄ vna filia:neptis. Sž

res dt.ligcnter corrſideratu nõ indicat
|||||+#||#|||||+#||||#|||||| [33/(33+4+2+0)=33/39=84.62%]
res d°iligenter co°nſiderata nõ indicat

č tuntus nurntrlls flle rit° in progcnie
|||#|||||+##|+#+#|||-||||||#|| [28/(28+6+3+1)=28/38=73.68%]
č tantus nu°mer°us f°uerit in progenie

incoledic vcl unnõ quo ingreſsus cšt
|#||##||#||#||#|||||||||||#|| [28/(28+8+0+0)=28/36=77.78%]
iacob:die vel anno quo ingreſsus ešt

cgřüpturn.Comrnernořati ſunt qlli ppo
#|+#||#~|||+#+#|||||||||+#+#||# [23/(23+9+4+0)=23/36=63.89%]
eg°yptum. Com°me°morati ſunt q°uippe

īcill:. eriā pronicpotcs iofcph qui nul-
|++#####||#~|||||#|||#||||#||||||| [27/(27+10+2+0)=27/39=69.23%]
i°° eis etiā pronepotes ioſeph qui nul-

lo modo iaž tunc eſſt potucrtrnt quo
|||||||||||||||#||||#|+#|||| [32/(32+3+1+0)=32/36=88.89%]
lo modo iaž tunc eſſe potuer°unt quo

niam tunc°cdacum trigintu unnořlum
|||||||-|###||||||#|#||||+#| [26/(26+6+1+1)=26/34=76.47%]
niam tunc centum triginta annořum

erac iacobrſllius bo cius iacob trigit°u
|||#|||||##||||#||#||||||||||~|-# [31/(31+8+0+1)=31/40=77.50%]
erat iacob:filius úo eius iacob trigīta

nollē. Quqm cum ncccpeſſc tticcfirno
||###~||#|||||#||#||#||#||#||#| [21/(21+13+1+0)=21/35=60.00%]
nouē. Quem cum accepiſſe třiceſi°mo

unno ſuo llel umplius ccelnſlet°vxo:cž:
#|||||||+#||#|||||+|+#||#||-|||#|| [28/(28+7+3+1)=28/39=71.79%]
anno ſuo °uel amplius °c°onſtet vxořež:

qllomodo potuit pcr nouem unnoo
|+#|||||||#||#||||||#||# [26/(26+4+1+0)=26/31=83.87%]
q°uomodo potuit per nouem annos

hcuberc pronicpott:s det filus quos ex
|+#||||#||#||+|#||||+||#||||#|||||| [29/(29+5+3+0)=29/37=78.38%]
h°abere pronepo°tes de° filjs quos ex

cudem vxucuc śufccpit?°Cuż igicur°ncc
##||||##||#||#||||-||||#||-#| [25/(25+9+0+2)=25/36=69.44%]
eadem vxoře śušcepit? Cuż igitur nec

edlius hrbcr°mt°ephrcrn ž rrm našscu fi
##||#||#||#|-#||+##||#+|#||||#|| [23/(23+11+3+2)=23/39=58.97%]
filios haberent ephr°em ž °manašses fi

l:ž ioścph:sz̄ cus pueros infro č nouē
|+#||||#||||#||#|||||||#|||||| [31/(31+5+1+0)=31/37=83.78%]
l°j iośeph:sz̄ eos pueros infra č nouē

ncs tucob cggrpcō igrešsus inllcnerit:
|#||##|||+#|#||#~|||||||+##||| [26/(26+10+2+0)=26/38=68.42%]
nes iacob °egyptū īgrešsus in°uenerit:

qllo pacto což.ř non sólum edlq fiteri ēt
|+#||||#||#+|#||||#||#||| [27/(27+8+6+0)=27/41=65.85%]
q°uo pacto eo°ř non sólum filj °še°d ēt

ncpotes in ecclis ścptuagituqlinqž nūe
|#|||||||+#||||#|||-#|+#|||||| [31/(31+6+2+0)=31/39=79.49%]
nepotes in °illis śeptuagitaq°uinqž nūe

rmntut:qui tūc egxpcō ingrcfed śūt cuž
|#||||#|||||||~|#||||#||| [29/(29+9+0+0)=29/38=76.32%]
rantur:qui tūc egyptū ingrešsi śūt cuž

iacob?Ncum cornrnrcrnotuturt.bi ma-
||||||##|||++##|##||#|||| [20/(20+11+3+0)=20/34=58.82%]
iacob? Nam co°°memoratur ibi ma-

chir filius rnanašsc ncpus iofeph:-řc
|||||||+#||||#||#||#||||#||| [28/(28+8+1+0)=28/37=75.68%]
chir filius °manašse nepos iośeph:ž e

it.rsdcrn machir edlius id cšt golund nc:
|++#||+#||||#||#||||#||| [27/(27+10+4+0)=27/41=65.85%]
i°ušd°em machir filius id ešt galaad n°e

pos mnnašsc pronicpos iofcph. Ibt.ē
||||#||||#||||#||| [27/(27+7+0+0)=27/34=79.41%]
pos manašse pronepos iośeph. Ibi ē

ž quč gcnu°n cphreru Qltar edlf- iofcph
||||#||#||-#|#|||+#|#||#||#||| [24/(24+13+1+1)=24/39=61.54%]
ž quē genuit ephre°m alter filiū iośeph

id cšt vtulnđm ncpoo iofcph: xbi cšt ct
|||#||||#||#||#||| [27/(27+11+1+0)=27/39=69.23%]
id ešt vtalaam nepos iośeph:°ibi ešt et

buerceh filatus t.p:-tuo vtolue id ē ncpos
|+#+|#||||+#|||+##|#|||#||#||||||#|| [28/(28+10+5+0)=28/43=65.12%]
b°ar°eth fil°ius °ip°šius vtalae id ē nepos

cphrcm pronicpoo ioścph: qlli nđllo°
#||||#||||#||#|||+|#||#||| [25/(25+7+2+1)=25/35=71.43%]
ephrem pronepos iośeph:°q°ui nullo

rnodo ešsc potucrūt qñ tunitatucob in
+#||||#||||#||| [28/(28+8+1+0)=28/37=75.68%]
°modo ešse potuerūt qñ venit iacob in

cgxptit ž edlios iofcph npotcs flus
#|~|+##|##|##|##|##|#||#||#+##| [23/(23+12+2+0)=23/37=62.16%]
egypt ū ž filios ioſeph nepotes ūuos

cuous eſtocum rmnorea č nolluž unnō
+##|##|#||#||#||#||#||#||#+##||#||# [23/(23+10+2+0)=23/35=65.71%]
auos iſtorum minores č no ūuež anno

rllm pucros ĩnucrnt. Scd nimia umi-
|+##|##|#|||~|##|-|#|||##| [22/(22+11+1+1)=22/35=62.86%]
r ūum pueros inuenit. Sed nimirum ĩ-

trotrna racob acn cgxptum qñ clm in
|||##|#|||+##|#|~|||+##| [24/(24+10+2+0)=24/36=66.67%]
troitus iacob ūin egyptum qñ ūeum in

fcptucugintaqlirtqž horninibus ſcenp
#|+##|##|+##|+##|##| [25/(25+8+4+0)=25/37=67.57%]
ſeptu ūagintaq ūi ūnqž ho ūminibus ſcrip

turu cornrncrnornt:non vnun diccel vl.
|||#|++##|#|||+##| [23/(23+9+6+0)=23/38=60.53%]
tura co ūmemorat:non vnus di ūes vt.

unuo unnust:fcd totum illud cſt ccm-
#|#|#|+##| [27/(27+8+1+0)=27/36=75.00%]
vnus annus ū:sed totum illud eſt tem-

pus čídatu vixit toftph: per qutž feaccū
|||~+##|##|+##| [29/(29+7+4+0)=29/40=72.50%]
pus c ūd ūvixit ioſeph: ūper quež f ūactū

cſt vc intror.:nt.Ncrm dc ipfo iofcph
#|#|#| [25/(25+11+1+0)=25/37=67.57%]
eſt vt intrar ūent. Nam de ipſo ioſeph

eadcm fcripturn ſic loquitur ž habita
|||#|#| [34/(34+3+0+0)=34/37=91.89%]
eadem ſcriptura ſic loquitur ž habita

u ūniofcph in cggryptocipfe cc fracrcs c-
| -#|##|+##|#| [25/(25+12+1+2)=25/40=62.50%]
uit ioſeph in ūegypto:ipſe et fratres e-

ius žornniu cohubrmtio pntr ūm cius:
|||##|#| [23/(23+12+0+1)=23/36=63.89%]
ius ž omnis cohabitatio patris eius:

ž vixitsnnotu cctnur ž decrrn ž vidacc
|||##|#| [25/(25+11+3+0)=25/39=64.10%]
ž vixit annos centu ūm ž de ūcem ž vid ūit

iofcph mnnaſſio ž cphrcm edltos vfqž
||#| [25/(25+11+0+0)=25/36=69.44%]
ioſeph manaſſes ž ephrem filios vſqž

in tertiar gnct:rmioncm. Ipfc cſt illc
|||+##|#| [27/(27+11+1+0)=27/39=69.23%]
in tertia ūm generationem. Ipſe eſt ille

prortepos ciuscab cphrcm tcr ūnuscg
|||+##|#| [24/(24+9+1+1)=24/35=68.57%]
pro ūnepos eius:ab ephrem tertius:ge

nerorioencm quippt:tcrtiuž dīcīt:edliň:
|||##|+##| [26/(26+12+1+0)=26/39=66.67%]
neratio ūnem quippe tertiaž dicit:filiū:

Report # 4 on page 409 (with data training from pp. 200, 201, 408, 600)

total # of chars in ocr: 1696

total # of chars in ground truth: 1674

total # of edit operations: 1711

total # of matching chars: 1516

total # of substitutions: 143

total # of insertions: 37

total # of deletions: 15

precision [matches/(matches+subs+inss)]: $1516/(1516+143+37)=89.39\%$

recall [matches/(matches+subs+dels)]: $1516/(1516+143+15)=90.56\%$

accuracy [matches/(matches+subs+inss+dels)]: $1516/(1516+143+37+15)=88.60\%$

similarity rate [average of 1-normalized_edit_distance]: 86.96%

Alignment:

minatione edli mi aścendiśsi: ūecumbēs°
|||||||##|~||||#||||- [33/(33+4+0+1)=33/38=86.84%]
minatione fili mi aścendiſti: ūecumbēs

dōrmiſti út leo. ź vt catulus leonis.
|||||~||||| [36/(36+1+0+0)=36/37=97.30%]
dōrmiſti vt leo. ź vt catulus leonis.

Quis fufcitabit eum? Nō cieściet þn-
||||#|||||+#+#||||| [30/(30+5+1+0)=30/36=83.33%]
Quis suścitabit eum? Nō °deficiet þn-

ceps ex īutiu:z dux de femoribus eiua
|||||~|+#+||||| [32/(32+4+1+0)=32/37=86.49%]
ceps ex iu°da:z dux de femoribus eius

donee veniant que repofita funt eicet
||||#|||||#||||| [33/(33+4+0+0)=33/37=89.19%]
donec veniant que repośita šunt ei:et

ipfe erii expectatio gentiuž. Alligana
||#||||#||||| [35/(35+3+0+0)=35/38=92.11%]
ipše erit expectatio gentiuž. Alligans

ad vitem pcelum fuum ź cilitio aśine
|||||||##|#|||| [33/(33+3+0+0)=33/36=91.67%]
ad vitem pullum ſuum ź cilitio aśine

fuetlausbit in vino ſtolem fuſm: ź in
#||#||||#||||| [31/(31+6+0+0)=31/37=83.78%]
ſue:lauabit in vino ſtolam ſuam: ź in

iartguine°vue amictum fuuž. ūului°o-
#|+#||||-||||| [29/(29+4+1+2)=29/36=80.56%]
ša°nguine vue amictum ſuuž. Fului o-

culi eius a vino ź dentes caitäidio°na
|||||||||+#+#||||-# [32/(32+4+1+1)=32/38=84.21%]
culi eius a vino ź dentes ca°ndidioŕes

lacte.°Expośui hec aduerſus maniche
|||||-||||| [34/(34+0+0+1)=34/35=97.14%]
lacte. Expośui hec aduerſus maniche

um fau^oulm difputana: ž fatis eſſe ar
|||||-#||||#||||#||||#||||| [31/(31+5+0+1)=31/37=83.78%]
um fauſtum diſputans: ž ſatis eſſe ar

bitrof quantum veritas pphetie hu-
||||||||||||||||||||| [34/(34+0+0+0)=34/34=100.00%]
bitrof quantum veritas pphetie hu-

ius elucet:vbi ž moes chriſti ptedicta
||||||||||||||#+||||||||#||||| [36/(36+2+0+0)=36/38=94.74%]
ius elucet:vbi ž moſ chriſti ptedicta

eſt verbo clormitionis ſz nō neceſſitas
||||||||+#+||||||||#||||| [35/(35+2+1+0)=35/38=92.11%]
eſt verbo °dormitionis:ž nō neceſſitas

fiteri poteſtas in moſtem nomine leoſis:
++#+#||||||||||||| [34/(34+2+3+0)=34/39=87.18%]
°°ſe°d poteſtas in moſtem nomine leoſis:

Quam poteſtatem in euangelio ipfe
||||||||||||||||| # [32/(32+1+0+0)=32/33=96.97%]
Quam poteſtatem in euangelio ipſe

pritericat:dicens poteftatem hsbeo po
||++#+#||||||||| #||||| [32/(32+3+3+0)=32/38=84.21%]
pr°°e°dicat:dicens poteſtatem habeo po

nendi animom meam:ž poteſtate ha-
||||||||#||||| [32/(32+1+0+0)=32/33=96.97%]
nendi animam meam:ž poteſtate ha-

beo iteruž fumendi ea-ž.Nemo eaž tol
||||||||#||||||##~||||| [32/(32+4+0+0)=32/36=88.89%]
beo iteruž ſumendi eaž. Nemo eaž tol

lit°a me:ſed ego eaž pono a me ipfo e°e
|||-||||||||||||||#||-# [35/(35+2+0+2)=35/39=89.74%]
lit a me:ſed ego eaž pono a me ipſo et

iteruž ſumo eam.Sic leo fremutt fic
||||||||||||||||#|| [33/(33+2+0+0)=33/35=94.29%]
iteruž ſumo eam.Sic leo fremuit ſic

qusd elixit impleuitt:ad eaž nanqž per
||#||+#||||||||+||||| [34/(34+2+2+0)=34/38=89.47%]
quod °dixit impleui°t:ad eaž nanqž per

tinet poteſtatež:quoel de reſuerectiōe
||||||||||||||#+#||||||+||~| [35/(35+2+2+0)=35/39=89.74%]
tinet poteſtatež:quo°d de reſuerectiōe

cius adiunctum eſt. Quts fufcitabit
#||||||||||||||#||#|| [31/(31+4+0+0)=31/35=88.57%]
eius adiunctum eſt. Quis ſuſcitabit

eū?Hoc eſt quia nullus hominū: niſi
||||||||||||||||| [35/(35+0+0+0)=35/35=100.00%]
eū?Hoc eſt quia nullus hominū: niſi

ſe ſpſe fufcitauit:qui etiarrt de coŕpoē
||#||#||#||||||#+#||||| [35/(35+4+2+0)=35/41=85.37%]
ſe ipſe ſuſcitauit:qui etia°°m de coŕpoē

ſuo dixīc.Solutte templum hoc ž in
||||||~#||||#||||| [31/(31+3+0+0)=31/34=91.18%]
ſuo dixit.Solute templum hoc ž in

trliciūo refuicicabo illuel.Ipſum autež
||+++#||||#||#||#||||||#~||||| [30/(30+7+3+0)=30/40=75.00%]
tr°°iduo reſuſcitabo illud. Ipſum autež

genus mortis hoc eſt fublimitus crū-
||||| #||||| #||||| [34/(34+2+0+0)=34/36=94.44%]
genus mortis hoc eſt ſublimitas crū-

cis:ī°vno verbo intelliigitur quod ait
|||-#||||| #||||| [35/(35+1+0+1)=35/37=94.59%]
cis:ī vno verbo intelligitur quod ait

aſcendiſti.Qō vero addiličiūit recūbēa
|||~#|||||++#||||| [30/(30+4+3+0)=30/37=81.08%]
aſcendiſti.Qō vero add°°idit recūbēs

oōmiſti:euāgeliſta expcōit vbī°ditit:z°ē
#|-#|||-#|||++#|||-# [31/(31+6+1+2)=31/40=77.50%]
ðōmiſti:euāgeliſta exp°ōit vbi dicit:z ī

elinato capite tradliciūit ſpum. Aut cer
#|||||++#|||-#||| [35/(35+2+3+0)=35/40=87.50%]
clinato capite trad°°idit ſpum. Aut cer

te feputura eius agnofci°mr°in qua ře
|||#|||||#|||-#|-#||| [33/(33+3+0+2)=33/38=86.84%]
te ſepultura eius agnoſcitur in qua ře

cubuit oořmienarž vnde illuž nullus
|||||#|||||##||||| [32/(32+3+0+0)=32/35=91.43%]
cubuit ðořmiens:z vnde illuž nullus

hominum ficut propheṭe ſliquos°mol
|||||#|||||#|||-#| [29/(29+4+0+1)=29/34=85.29%]
hominum ſicut propheṭe aliquos:vel

ficut ipfe alios ſuſcitauit.šz ſiē a ſōno
#|||||#|||||#|||-#| [38/(38+3+0+0)=38/41=92.68%]
ſicut ipſe alios ſuſcitauit.šz ſič a ſōno

ipſe furrexit. Stola pořfo eius qusm
|||||#|||||#|||-#| [34/(34+2+0+0)=34/36=94.44%]
ipſe ſurrexit. Stola pořfo eius quam

lauat īvitio:liciū eſt muntiut a peccatis
|||||###|||++#|||||+##||||| [30/(30+7+4+0)=30/41=73.17%]
lauat ī vino:°°id eſt mun°dat a peccatis

in fanguine fuo cuius fanguinis facta
|||#|||||#|||||#|||-#| [32/(32+5+0+0)=32/37=86.49%]
in ſanguine ſuo cuius ſanguinis ſacrá

merſtum baptižati ſciūt:vneſta ź adiun
||+#|||||#|||-#|||-# [32/(32+3+3+0)=32/38=84.21%]
me°ntum baptižati ſciūt:vn°de ź adiun

git ź ī fanguine vue emictū ſuū quliciū
|||||#|||||#|||-#|||-# [33/(33+3+3+0)=33/39=84.62%]
git ź ī ſanguine vue amictū ſuū qu°°id

eſt niſi ecclēſis?Et fului oculi eius a vē
|||-#|||||#|||||#|||-# [39/(39+3+0+0)=39/42=92.86%]
eſt niſi ecclēſia?Et fului oculi eius a vi

no ſpirituaſes eius inebriasi potulo
|||#|||||#|||-#| [34/(34+2+0+0)=34/36=94.44%]
no ſpirituaſes eius inebriasi poculo

ciuſcō quo canit pfalmuat ź°calix tuů
#||#|||||#|||-#|||-#| [30/(30+6+0+1)=30/37=81.08%]
eius:ð quo canit pſalmus: ź calix tuů

Report # 5 on page 600 (with data training from pp. 200, 201, 408, 409)

total # of chars in ocr: 1657

total # of chars in ground truth: 1647

total # of edit operations: 1674

total # of matching chars: 1482

total # of substitutions: 148

total # of insertions: 27

total # of deletions: 17

precision [matches/(matches+subs+inss)]: $1482/(1482+148+27)=89.44\%$

recall [matches/(matches+subs+dels)]: $1482/(1482+148+17)=89.98\%$

accuracy [matches/(matches+subs+inss+dels)]: $1482/(1482+148+27+17)=88.53\%$

similarity rate [average of 1-normalized_edit_distance]: 86.71%

Alignment:

llle faeit°qui sūme ešt:ž facit ešše°čcčd
#|||||#||-|||||||||||||||||-|||| [37/(37+2+0+2)=37/41=90.24%]
ille facit qui sūme ešt:ž facit ešše čcčd

aliquo modo ešt.Duū īgitur illocū č
||||||||||||||||~||||||||#||| [33/(33+2+0+0)=33/35=94.29%]
aliquo modo ešt.Duū īgitur illorū č

diximus bona:etiā in natura peccato
|||||||||||||||||||||||| [35/(35+0+0+0)=35/35=100.00%]
diximus bona:etiā in natura peccato

uitiatu fupplicioqž demnatacde boni
||||||#|#||||||||#||||#|||| [31/(31+4+0+0)=31/35=88.57%]
uitiata ſupplicioqž damnata:de boni

tatis eius quodā ueluti fonte monate
||||||||||||||||||||#||#| [34/(34+2+0+0)=34/36=94.44%]
tatis eius quodā ueluti fonte manare

propagacionngiin ptitnis mundi ope
||||||#||+|##|##|#||+|#||||| [27/(27+5+2+0)=27/34=79.41%]
propagatio°nē:in pri°mis mundi ope

ribus bdaiteriiccōe nitirgitus eſtea čbus
|||||||++##|+#||#||+###||||||||#|||| [29/(29+7+5+0)=29/41=70.73%]
ribus b°°ene°dictōe °largitus eſt:a čbus

operibus die ſeptio requieuft. Cōſiŕ-
||||||||||||||||||||#||||#||| [35/(35+2+0+0)=35/37=94.59%]
operibus die ſeptio requieuit. Cōfiŕ-

matio uero in°illo eius opere eſt:quo
|||||||||-|||||||||||||||| [36/(36+0+0+1)=36/37=97.30%]
matio uero in illo eius opere eſt:quo

uſqž nunc opecat.°Eſſitaxē quippe po
||||||||#||-|##|#|#||||| [30/(30+5+0+1)=30/36=83.33%]
uſqž nunc opeat. Efficacē quippe po

tentiā fuā ſi rebus fubtahat°mec pto
||||||#||||||||#||#||||-#||||#| [31/(31+5+0+1)=31/37=83.78%]
tentiā ſuā ſi rebus ſubtahat:nec p̄o

gredi poterunt-ecfuis dimenfis moti
|||||||~###||||#|||| [30/(30+5+0+0)=30/35=85.71%]
gredi poterunt z suis dimenfis moti

bus pcragere tēpora:net prorfus i°eo
||||#|||||~####|||~|| [31/(31+4+0+1)=31/36=86.11%]
bus peragere tēpora:nec prorsus ī eo

c°creacicer funt aliquaeēus rimanebāt.
|-|||++#+|#|||||#|||+#+||||#|| [28/(28+5+4+1)=28/38=73.68%]
c crea°te° sunt aliquatēus °Bmanebūt.

Sic trgo °ueauit hominē eſtaus:ut tlli
||||#|||-#|||||~|||++#||||#|| [29/(29+6+2+1)=29/38=76.32%]
Sic ergo creauit hominē °deus:ut illi

adderet fertilitatē quandā qua alioa
|||||||~|||||+|||||# [34/(34+2+0+0)=34/36=94.44%]
adderet fertilitatē quandā qua alios

hoīcs p̄opagařet: cōgenerans eis eti
||~#|||||+||||| [33/(33+2+1+0)=33/36=91.67%]
hoīes p̄opagařet: °cōgenerans eis eti

am īp̄sā propagōdi poſſibiličatē non
||~||||#|||||~#|||| [30/(30+5+0+0)=30/35=85.71%]
am ip̄sā propagādi poſſibilitatē non

neceſſitutē.Quibus temē uoltut hōi
||||#||||#||||#|||## [30/(30+4+0+0)=30/34=88.24%]
neceſſitatē.Quibus tamē uoluit hōi

bus abitulit eā deu°in ſteriles fuerūt.
||||#||||~-#|||| [35/(35+3+0+1)=35/39=89.74%]
bus abſtulit eā deu:z ſteriles fuerūt.

Nō tamē generi humsno aleſtulit fa
|||||#|||||+#||||## [29/(29+4+1+0)=29/34=85.29%]
Nō tamē generi humano a°bſtulit ſe

mel datā ptius dusbus contugibus
||||#||||#||||#|||| [29/(29+3+0+0)=29/32=90.62%]
mel datā prius duobus coniugibus

benedictionē geteerādi. Hec ergo pro
|||||#||||+#|||| [34/(34+1+1+0)=34/36=94.44%]
benedictionē ge°nerādi. Hec ergo pro

pagstio quāuis peccato ablaca nō fu
||#|||||#||||#|||| [33/(33+2+0+0)=33/35=94.29%]
pagatio quāuis peccato ablata nō fu

erit:nō tamen etcō ipfa talis eſt:qualū
||||#||||##||||#|||| [34/(34+4+1+0)=34/39=87.18%]
erit:nō tamen etiā ipſa talis eſt:qual°

fuiſſetūſt nemo peccaſſet. Ex quis eniž
||~#||||#|||||#||||#|||| [34/(34+4+0+0)=34/38=89.47%]
fuiſſet ſi nemo peccaſſet. Ex quo eniž

homo in honore pofitus poſtea°c de
|||||#||||#||||-||| [32/(32+1+0+1)=32/34=94.12%]
homo in honore poſitus poſtea c de

liquit cōparntua eſt pecoribuerimili
|||||#||||#|||||## [32/(32+5+0+0)=32/37=86.49%]
liquit cōparatus eſt pecoribus:simili

ter generut.Non in°eo tumen penitus
||||#||||-|||#|||| [32/(32+2+0+1)=32/35=91.43%]
ter generat.Non in eo tamen penitus

extincta°est° quedā uelut fintilla eatiu
|||||-||||-|||||#||||||#|||#[34/(34+3+0+2)=34/39=87.18%]
extincta est quedā uelut sintilla ratio

nis in qua factus eit°ad imaginez dei.
|||||#|||||#|||#[36/(36+1+0+1)=36/38=94.74%]
nis in qua factus est ad imaginez dei.

Huie autē propagacōi sí cōformatio
|||#|||||#|||#[32/(32+2+0+0)=32/34=94.12%]
Huic autē propagatōi sí cōformatio

nōn adhiberecinec tpfa in fui generia
|#|||||#|||#[30/(30+7+0+0)=30/37=81.08%]
non adhiberet:nec ip̄sa in sui generis

formaa modofqz procedetet.Si eniz
|||||#|||||#|||#[30/(30+3+0+0)=30/33=90.91%]
formas modośqz procedeřet.Si eniz

non cōcubuiedēt holes: z nihilominū
|||||~#|||#+|||~|||[28/(28+6+1+0)=28/35=80.00%]
non cōcubuiſſēt hoies:°z nihilominū

deus uellet iplere terras hominibus:
|||||~|||||[35/(35+1+0+0)=35/36=97.22%]
deus uellet iplere terras hominibus:

qusmō creauit unū edne cōmixtione
||#|||||#|||#[29/(29+4+0+0)=29/33=87.88%]
quomō creauit unū sine cōmixtione

meris z fcmineefic poſſet omnea:con
|#|||||#|||#[30/(30+5+0+0)=30/35=85.71%]
maris z femine:ſic poſſet omnes:con

cumbentes uero niſt illo creante geue
|||||#|||#[35/(35+2+0+0)=35/37=94.59%]
cumbentes uero niſi illo creante gene

rantes eſſe nō poſſüt.Sicut ergo ait
|||||#|||#[36/(36+0+0+0)=36/36=100.00%]
rantes eſſe nō poſſüt.Sicut ergo ait

sþoþtolus de inſtitucelōe fpicitali qua
#~|||||#|||#[32/(32+5+2+0)=32/39=82.05%]
apoþtolus de inſtitu°tōe ſpiritali qua

homo ad pietatē iuſtCtiāqz foematurec
|||||#|||#[33/(33+3+1+0)=33/37=89.19%]
homo ad pietatē iuſtitiāqz foŕmaturº:

neqz qui plantat eſt alrtquid neqz qui
|||||+#|||#[36/(36+1+1+0)=36/38=94.74%]
neqz qui plantat eſt al°i quid neqz qui

rigat:fiteri qui incremenřu dat deº.ºIta
|||||+#|||#[33/(33+3+3+1)=33/40=82.50%]
rigat:ºſeºd qui incrementu dat deº. Ita

etiā hic dici pcūt:nec č coneſibit:nec č°
|||||+#|||#[35/(35+3+2+1)=35/41=85.37%]
etiā hic dici p°ot:nec č con°cubit:nec č

šeiacčaličd:sz č format°deus.Nec mā
||-|#|||||#|||#[31/(31+3+0+1)=31/35=88.57%]
šeiat aličd:sz č format deus.Nec mā

quomō supra nos ē quādo 7 nos hoc sumus:nec ita effet nisi miseri eēmus: Quod corpore aerea quanti estimādum est:cum omni corpori preferatur aīe qualiscunq̄ natura:Et iō ̄ligiōis cultus qui debetur ex animo nequaꝝ debetur ei rei que animo est inferior. Porro si inter illa que demonum esse dicit annumerēt uirtutem: sapientiā: felicitatem:7 hec eos diceret habē cuꝝ dijs eterna atꝝ communia : profecto aliquid diceret exoptandum magniꝝ pendendū; nec sic eos tamen propter hec tanquam deum colere deberēus: sed potius ipsum a quo hec illos acce pisse nossimus. Quāto minus nunc honore diuino aerea digna sunt animalia:ad hoc rationalia ut misera eē possint:ad hoc passiua ut misera sint: ad hoc eterna ut miseriam suā finiū n̄ possint:Quapropt̄ ut omittā; cēta 7 hoc solum pertractem q̄ nobiscum demones dixit habere commune: id est animi passiones si omnia quatuō ele menta suis aīlibus plena sunt:immō talibus ignis 7 aer: mortalib⁹ aqua 7 terra: quero cur animi demonū passionum turbelis 7 tempestatib⁹ agitent. Perturbatio enim est que grece pathos dicitur:unde illa voluit uocare animo passiua: quia uerbum de v̄bo pathos passio dicētū: motus animi cōtra rationem. Cur ergo sunt ista i animis demonum:que in pecorib⁹ non sunt?Quoniam siquid in pecore simile appareat nō ē perturbatio:quia non est cōtra rationem qua pecora carēt. In hominib⁹ autē ut sint iste perturbationes:facit hoc stultitia aut miseria. Nōdum enim sumus in illa perfectio ne sapiētie beati:que nobis ab hac mortalitate liberatis in fine promittitur. Deoſ uero ideo dicunt istas perturbationes non perpeti: quia non solum eterni uerum etiam beati sunt. Easdē quippe animas rationales etiam ipos

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pletunt̄ seueritate legū: si opera sunt numinum colendozum: An forte istas leges christiani instituerunt: qb⁹ artes magice puniuntur: secundum quem aliū sensum:nisi q̄ hec maleficia generi humano pnitiosa eē ñ dubiū ē:Ait poeta clarissimus. Testō cara deos:7 te germana:tuūq Dulce caput magicas inuitā accingier artes. Illud ēt qō alio loco de his artib⁹ dicit. Atq̄ satas alio uidi traducē messes. Eo q̄ hac pestifera scelerataq̄ doctrīa:fruct⁹ aliē i alias trās transferri phibēt: nōne in duodecim tabulis.i.20anorū antiquissimis legibus cicero commēmorat eē conscriptū:7 ei qui hoc fecerit supplicū cōstitutū: Postremo ipē apuleius:nunquid apud iudices christianos de magicis artibus accusatus est:Quas utiq̄ sibi obiectas si diuīas 7 piās esse nouerat:7 diuīaz potestatum operibus congruas:non solum eas cōfiteri debuit:sed ēt pfiteri:leges culpans potius quibus hec prohiberentur 7 damnanda putarentur:q̄ ha beri miranda 7 ueneranda oportet. Ita enim uel sententiaꝝ suā persuadēt iudicib⁹:vel si illi secundum iniquas leges saperent: eūq̄ talia predicanter atq̄ laudantem morte multarent digna anime illius demōes dona rependerent:pro quoꝝ diuinis operibus predicandis humanā uitā sibi adimi non timerent. Sicut martyres nostri cū eis pro crīe objēctur christiana religio: qua nouerant se fieri saluos 7 gloꝝ olissimos in eternum:non eaꝝ ne gāndo temporales penas euadere delegerunt:sed potius confitendo:profittendo:predicando:7 pro hac oīa fide lit fortiterq̄ tolerando:7 cū pia securitate moriendo:leges quib⁹ phibebāt erubescē cōpulerūt:mutariq̄ fecerūt. Huius autem philosophi platonici copiosissima 7 disertissima extat oīo: qua crīmen artium magicarum a fe

pletunt̄ seueritate legū: si opera sunt numinum colendorum: An forte istas leges christiani instituerunt: qb⁹ artes magice puniuntur: secundum quem aliū sensum:nisi q̄ hec maleficia generi humano pnitiosa eē ñ dubiū ē:Ait poeta clarissimus. Testō cara deos:7 te germana:tuūq Dulce caput magicas inuitā accingier artes. Illud ēt qō alio loco de his artib⁹ dicit. Atq̄ satas alio uidi traducē messes. Eo q̄ hac pestifera scelerataq̄ doctrīa:fruct⁹ aliē i alias trās transferri phibēt: nōne in duodecim tabulis.i.20anorū antiquissimis legibus cicero commēmorat eē conscriptū:7 ei qui hoc fecerit supplicū cōstitutū: Postremo ipē apuleius:nunquid apud iudices christianos de magicis artibus accusatus est:Quas utiq̄ sibi obiectas si diuīas 7 piās esse nouerat:7 diuīaz potestatum operibus congruas:non solum eas cōfiteri debuit:sed ēt pfiteri:leges culpans potius quibus hec prohiberentur 7 damnanda putarentur:q̄ ha beri miranda 7 ueneranda oportet. Ita enim uel sententiaꝝ suā persuadēt iudicib⁹:vel si illi secundum iniquas leges saperent: eūq̄ talia predicanter atq̄ laudantem morte multarent digna anime illius demōes dona rependerent:pro quoꝝ diuinis operibus predicandis humanā uitā sibi adimi non timerent. Sicut martyres nostri cū eis pro crīe objēctur christiana religio: qua nouerant se fieri saluos 7 gloꝝ olissimos in eternum:non eaꝝ ne gāndo temporales penas euadere delegerunt:sed potius confitendo:profittendo:predicando:7 pro hac oīa fide lit fortiterq̄ tolerando:7 cū pia securitate moriendo:leges quib⁹ phibebāt erubescē cōpulerūt:mutariq̄ fecerūt. Huius autem philosophi platonici copiosissima 7 disertissima extat oīo: qua crīmen artium magicarum a fe

femine cōmēorāt vna filia:neptis. S3 res diligenter considerata nō indicat q̄ tantus numerus fuerit in progenie iacob:die vel anno quo ingressus est egyptum. Commemo:ratī sunt quippe ī eis etiā pronepotes ioseph qui nullo modo iaꝝ tunc esse potuerunt quo niam tunc centum triginta annorum erat iacob:filius vō eius iacob trīgīta nouē. Quem cum accepisse trīcesimo anno suo uel amplius constet vxore;: quomodo potuit per nouem annos habere pronepotes de filijs quos ex eadem vxore suscepit? Cuꝝ igitur nec filios haberent ephrem 7 manasses filij ioseph:f3 eos pueros infra ♂ nouēnes iacob egyptū īgressus inuenierit: quo pacto eoꝝ non solum filij sed etē nepotes in illis septuagītaquinqꝫ nūe rantur:qui tūc egyptū īgressi sūt cuꝝ iacob? Nam commemo:ratū ibi machir filius manasse nepos ioseph:7 eiūsdem machir filius id est galaad ne pos manasse pronepos ioseph. Ibi ē 7 quē genuit ephrem alter fili⁹ ioseph id est vtalaam nepos ioseph:ibi est et bareth filius ipsius vtalae id ē nepos ephrem pronepos ioseph:qui nullo modo esse potuerūt qñ venit iacob in egyptū 7 filios ioseph nepotes suos auos istorum minores ♂ nouēz anno rum pueros inuenit. Sed nimium ītroitus iacob in egyptum qñ eum in septuagītaquinqꝫ hominibus scrip:tura commemo:rat:non vñus dies vñ vñus annus:sed totum illud est tempus ♂diu vixit ioseph:per queꝝ factū est vt intrarent. Nam de ipso ioseph eadem scriptura sic loquitur 7 habita:uit ioseph in egypto:ipse et fratres eius 7 omnis cohabitatio patris eius: 7 vixit annos centum 7 decem 7 vidit ioseph manasses 7 ephrem filios vñqꝫ in tertiam generationem. Ipse est ille pronepos eius:ab ephrem tertius:ge:nerationem quippe tertiaꝝ dicit:filiū:

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minatione fili mi ascendisti: ecumbēs
dormisti vt leo. 7 vt catulus leonis.
Quis suscitabit eum? Nō deficiet p̄n-
ceps ex iuda: 7 dux de femoribus eius
donec veniant que reposita sunt ei: et
ipse erit expectatio gentiū. Alligans
ad vitem pullum suum 7 cilitio a fine
sue: lauabit in vino stolam suam: 7 in
sanguine vue amictum suu. Fului o-
culi eius a vino 7 dentes candidiores
lacte. Exposui hec aduersus maniche-
um faustum disputans: 7 satis esse ar-
bitror quantum veritas pphetie hu-
ius elucet: vbi 7 mozs christi predicta
est verbo dormitionis: 7 nō necessitas
sed potestas in mortem nomine leōis:
Quam potestatem in euangelio ipse
predicat: dicens potestatem habeo po-
nendi animam meam: 7 potestate ha-
beo iteru sumendi ea. Nemo ea tol-
lit a me: sed ego ea pono a me ipso et
iteru sumo eam. Sic leo fremuit sic
quod dixit implevit: ad ea nanq per-
tinet potestate; quod de resurectiōe
eius adiunctum est. Quis suscitabit
eū? Hoc est quia nullus hominū: nisi
se ipse suscitauit: qui etiam de corpore
suo dixit. Soluite templum hoc 7 in
triduo resuscitabo illud. Ipsum aute
genus mortis hoc est sublimitas cru-
cis: ī vno verbo intelligitur quod ait
ascendisti. Qd vero addidit recubēs
dōmīsti: euāgelista expoit vbi dicit: 7 ī
clinato capite tradidit spum. Aut cer-
te sepultura eius agnoscitur in qua re-
cubuit dormiens: 7 vnde illu nullus
hominum sicut prophete aliquos: vel
sicut ipse alios suscitauit. Sz siq a sōno
ipse surrexit. Stola porro eius quam
lauat ī vino: id est mundat a peccatis
in sanguine suo cuius sanguinis sacra
mentum baptizati sciūt: vnde 7 adiun-
git 7 ī sanguine vue amictū suū quid
est nisi ecclesia? Et fului oculi eius a vi-
no spirituales eius inebriati poculo
eius: d quo canit psalmus: 7 calix tu⁹

minatione fili mi ascendisti: ecumbēs
dormisti vt leo. 7 vt catulus leonis.
Quis suscitabit eum? Nō deficiet p̄n-
ceps ex iuda: 7 dux de femoribus eius
donec veniant que reposita sunt ei: et
ipse erit expectatio gentiū. Alligans
ad vitem pullum suum 7 cilitio a fine
sue: lauabit in vino stolam suam: 7 in
sanguine vue amictum suu. Fului o-
culi eius a vino 7 dentes candidiores
lacte. Exposui hec aduersus maniche-
um faustum disputans: 7 satis esse ar-
bitror quantum veritas pphetie hu-
ius elucet: vbi 7 mozs christi predicta
est verbo dormitionis: 7 nō necessitas
sed potestas in mortem nomine leōis:
Quam potestatem in euangelio ipse
predicat: dicens potestatem habeo po-
nendi animam meam: 7 potestate ha-
beo iteru sumendi ea. Nemo ea tol-
lit a me: sed ego ea pono a me ipso et
iteru sumo eam. Sic leo fremuit sic
quod dixit implevit: ad ea nanq per-
tinet potestate; quod de resurectiōe
eius adiunctum est. Quis suscitabit
eū? Hoc est quia nullus hominū: nisi
se ipse suscitauit: qui etiam de corpore
suo dixit. Soluite templum hoc 7 in
triduo resuscitabo illud. Ipsum aute
genus mortis hoc est sublimitas cru-
cis: ī vno verbo intelligitur quod ait
ascendisti. Qd vero addidit recubēs
dōmīsti: euāgelista expoit vbi dicit: 7 ī
clinato capite tradidit spum. Aut cer-
te sepultura eius agnoscitur in qua re-
cubuit dormiens: 7 vnde illu nullus
hominum sicut prophete aliquos: vel
sicut ipse alios suscitauit. Sz siq a sōno
ipse surrexit. Stola porro eius quam
lauat ī vino: id est mundat a peccatis
in sanguine suo cuius sanguinis sacra
mentum baptizati sciūt: vnde 7 adiun-
git 7 ī sanguine vue amictū suū quid
est nisi ecclesia? Et fului oculi eius a vi-
no spirituales eius inebriati poculo
eius: d quo canit psalmus: 7 calix tu⁹

ille facit qui sume est:7 facit esse qcqd aliquo modo est.Duū igitur illorū q̄ diximus bona:etiā in natura peccato uitiata supplicioq̄ damnata:de boni tatis eius quodā ueluti fonte manare propagationē:in primis mundi ope ribus benedictōe largitus est:a q̄bus operibus die sept̄o requieuit. Cōfimatio uero in illo eius opere est:quo usq̄ nunc operat. Efficacē quippe potentiā suā si rebus subtrahat:nec p̄ gredi poterunt 7 suis dimensis motibus peragere tēpora:nec prorsus ī eo q̄ create sunt aliquatēus p̄manebūt. Sic ergo creauit hominē deus:ut illi adderet fertilitatē quandā qua alios hoīes propagaret:cōgenerans eis etiam ipsā propagādi possibilitatē non necessitatē.Quibus tamē uoluit hoī bus abstulit eā deus:7 steriles fuerūt. Nō tamē generi humano abstulit semel datā prius duobus coniugibus benedictionē generādi. Hec ergo propagatio quāuis peccato ablata nō fu erit:nō tamen etiā ipsa talis est:qual' fuissest si nemo peccasset. Ex quo enī homo in honore positus posteaq̄ de liquit cōparatus est pecoribus:similiter generat.Non in eo tamen penitus extincta est quedā uelut sintilla ratio nis in qua factus est ad imaginez dei. Huic autē propagatiō si cōformatio non adhiberet:nec ipsa in sui generis formas modosq̄ procederet.Si enī non cōcubuissēt hoīes:7 nihilomin⁹ deus uellet iplere terras hominibus:quomō creauit unū sine cōmixtione maris 7 femine:sic posset omnes:con cumbentes uero nisi illo creante gene rantes esse nō possūt.Sicut ergo ait apostolus de institutōe spiritali qua homo ad pietatē iustitiāq̄ formatur:neq̄ qui plantat est aliquid neq̄ qui rigat:sed qui incrementū dat de⁹. Ita etiā hic dici pōt:nec q̄ concūbit:nec q̄ seiat aliqd:s̄ q̄ format deus.Nec mā

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