

From Close to Distant Reading. Towards the Computational Analysis of “Liber Abbaci”

WHAT

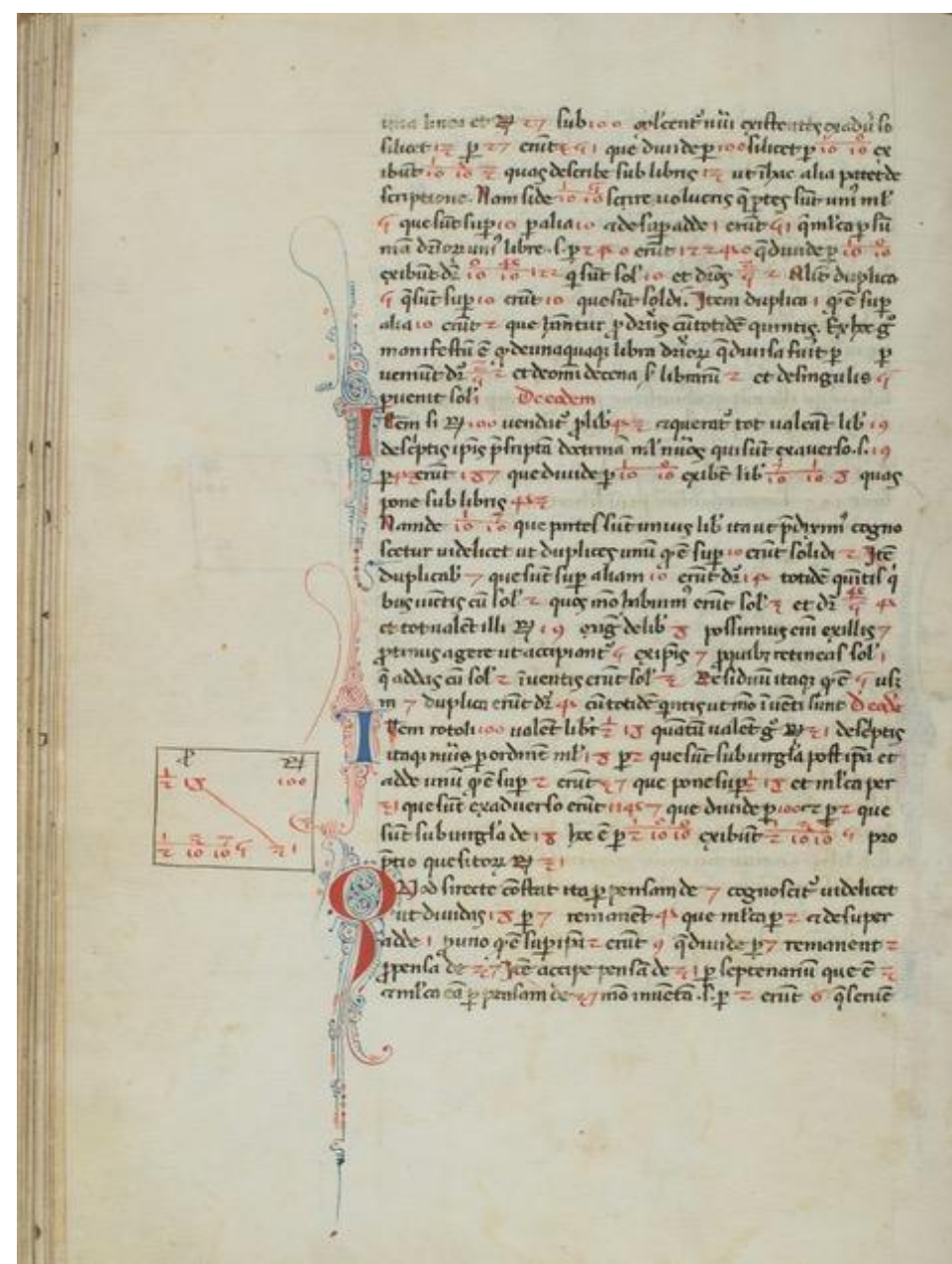
- Joint research project on Leonardo Fibonacci's *Liber Abbaci* with 2 aims:
 - transform the critical print edition by Enrico Giusti into a digital edition
 - analyse the text using computational linguistics methods
- Tuscany Region + University of Pisa + external researchers

WHY

- Recover the treasure of linguistic, mathematical and historical information that the work contains
- Facilitate the access to the book content by a wide audience
- Develop new computational linguistics resources for Medieval Latin

COMPUTATIONAL ANALYSIS

13	una	unus	NUM	-	-	-	-	-	-
14	linea	linea	NOUN	-	-	-	-	-	-
15	et	et	CCONJ	-	-	-	-	-	-
16	rotuli	rotulus	NOUN	-	-	-	-	-	-
17	27	27	NUM	-	-	-	-	-	-
18	sub	sub	ADP	-	-	-	-	-	-
19	100	100	NUM	-	-	-	-	-	-
20	;	;	PUNCT	-	-	-	-	-	-
21	multiplicentur	multiplico	VERB	-	-	-	-	-	-
22	numeri	numerus	NOUN	-	-	-	-	-	-
23	existentes	existo	VERB	-	-	-	-	-	-
24	ex	ex	ADP	-	-	-	-	-	-
25	aduerso	aduersum	NOUN	-	-	-	-	-	-
26	,	,	PUNCT	-	-	-	-	-	-
27	scilicet	scilicet	CCONJ	-	-	-	-	-	-
28	13	13	NUM	-	-	-	-	-	-
29	per	per	ADP	-	-	-	-	-	-
30	27	27	NUM	-	-	-	-	-	-
31	:	:	PUNCT	-	-	-	-	-	-
32	erunt	sum	VERB	-	-	-	-	-	-
33	351	351	NUM	-	-	-	-	-	-
34	,	,	PUNCT	-	-	-	-	-	-
35	que	qui	PRON	-	-	-	-	-	-
36	diuide	diuido	VERB	-	-	-	-	-	-
37	per	per	ADP	-	-	-	-	-	-
38	100	100	NUM	-	-	-	-	-	-
39	,	,	PUNCT	-	-	-	-	-	-
40	scilicet	scilicet	CCONJ	-	-	-	-	-	-
41	per	per	ADP	-	-	-	-	-	-



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MORPHO-SYNTACTIC ANALYSIS

- Manual annotation of Chapter VIII: tokenization, sentence splitting, PoS tagging, lemmatization following the Universal Dependencies framework
 - IAA: 0.97 k for lemmatization, 0.94 k for PoS tagging
- Evaluation of UDPipe models

Model	Lemma	PoS
LLCT	68.8	82.8
EvaLatin2020	63.6	81.9
Perseus	67.5	78.4
ITTB	65.6	77.1
Proiel	60.2	51.6

- Linking of Chapter VIII to the LiLa Knowledge Base

SEMANTIC ANALYSIS

- Lexical-semantic classification of single terms and multi-token expressions specific to the domain of trade and commerce in Chapter VIII
- Selected tags from the UCREL semantic tagset

B body-individual <i>pannus</i>	C arts and crafts <i>becuna</i>	F food-farming <i>frumentum</i>
G government-public <i>imperialis</i>	I money-commerce <i>pisaninus</i>	M movement
N numbers-measurement <i>libra</i>	O substances-materials <i>argentum</i>	S social actions <i>societas</i>
Z names <i>sicilia</i>		



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