Human Informatics
On Compute and Automation in the Study of Culture and History

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Outline

Human Informatics

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Human informatics
Computational methods
and informatics
Implementation @
AU.ARTS
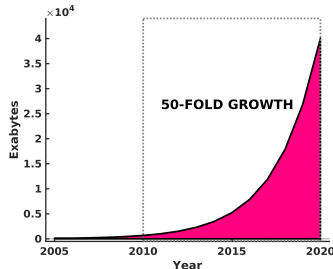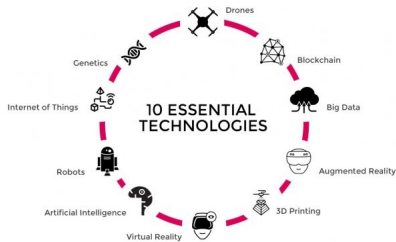Antithesis to informatics
Learning curves
CHCAA
Modes of informatics
Sanity checks
Old problems
New knowledge

On the role of informatics

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the data deluge is transforming knowledge discovery and understanding in every domain of human inquiry

a large part of these data are soft and unstructured $\Rightarrow$ to get value from these data, humanities (and social sciences) must utilize automation

human informatics - automatic information processing in the humanities

$\Rightarrow$ *use of automation in the study of culture and history*

K. Steinbuch (1957) Informatik: Automatische Informationsverarbeitung [Berlin: SEG-Nachrichten]

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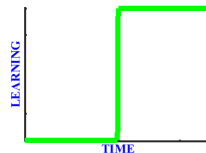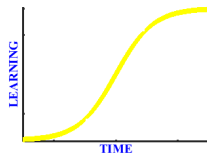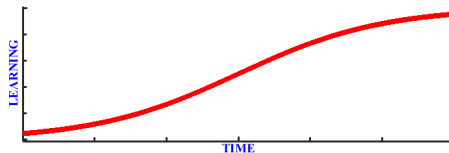CHCAA
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Humanities and Arts are the anti-thesis' of informatics $\Rightarrow$ research that solely relies on very few data points, an ideological resistance toward formalization, and a "myopic" perspective and human computation

Enable and empower domain knowledge in history, language, literature &c combined with microscopic and (predominantly) qualitative analysis of human cultural manifestations
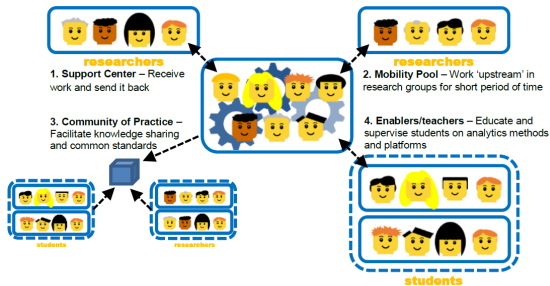
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'Digital tools' often behaves as the the research equivalent of 'plug and pray'

"breaking through the informatics learning curve" only works if humanities researchers do what they are good at: *humanities research*

Center for humanities computing

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In order to enable and empower domain knowledge in the humanities, AU.ARTS established Center for Humanities Computing Aarhus in 2019.

Benchmarks & sanity checks

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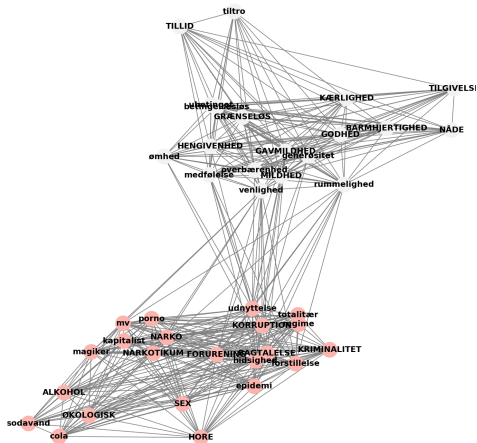Antithesis to informatics
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In $\sim$ 12K sermons from the Evangelical Lutheran Church in Denmark (2011-16), we find a associative system that reflects a traditionalist value system confronted with contemporary issues.

Solving old problems

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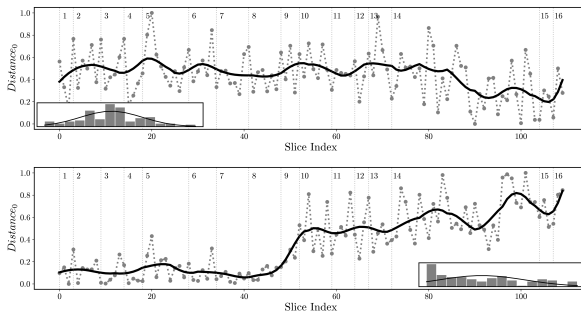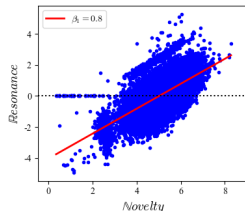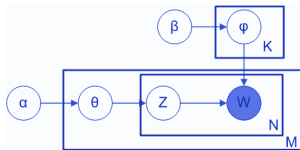Old problems
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Figure 1: Debate regarding the bipartite composition *Gesta Danorum*, 1) is the transition between the old mythical and new historical parts located in book eight, nine, or ten? and 2) is this transition gradual or sudden?

Discovery of new knowledge

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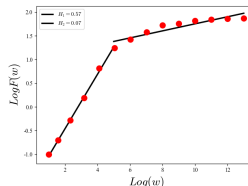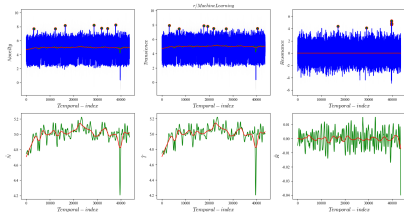Antithesis to informatics
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Trend detection for social media works well for point-like events (e.g., natural catastrophes and epidemics), but what are the signature(-s) of social trends? Analyzing 7TB+ data from `reddit.com`, we find that in certain `subreddits`, novelty ressonates more with the future and that content display long-term memory at short and intermediary time-scales.

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Thank you for your attention

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slides: http://knielbo.github.io/files/kln_comp_methods.pdf