

NLP in legal information retrieval and decision support

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LEGALESE

Natural Language Processing to support legal casework and enable efficiency and equality in social service legislation

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Ankestyrelsen

The field: Law and artificial intelligence

Legal governance:

Examples of law relevant to the use of artificial intelligence

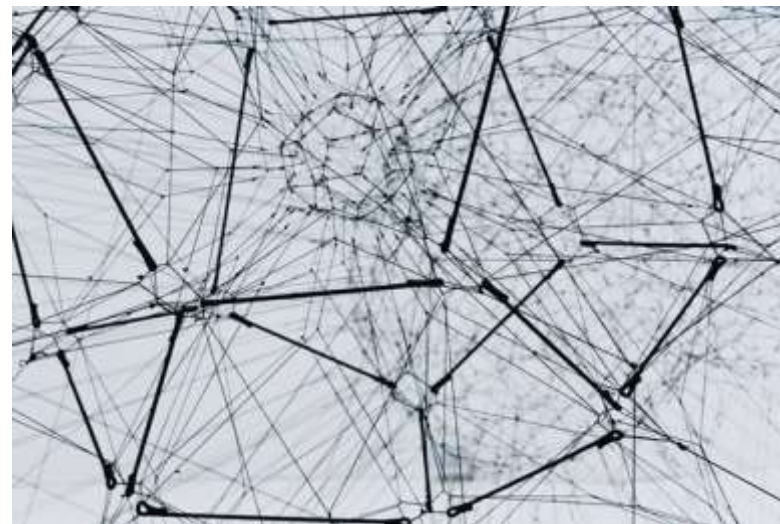
- ▶ Human rights
- ▶ GDPR
- ▶ AI ACT
- ▶ Administrative Law
- ▶ Internet law (Digital Services Act)
- ▶ ... etc

Computational law:

Examples of artificial intelligence as support to legal decision-making

- ▶ Compliance review
- ▶ Contract review
- ▶ Fraud detection
- ▶ Automated taxation
- ▶ Legal information retrieval
- ▶ ... etc

Computational law: using artificial intelligence to support legal work

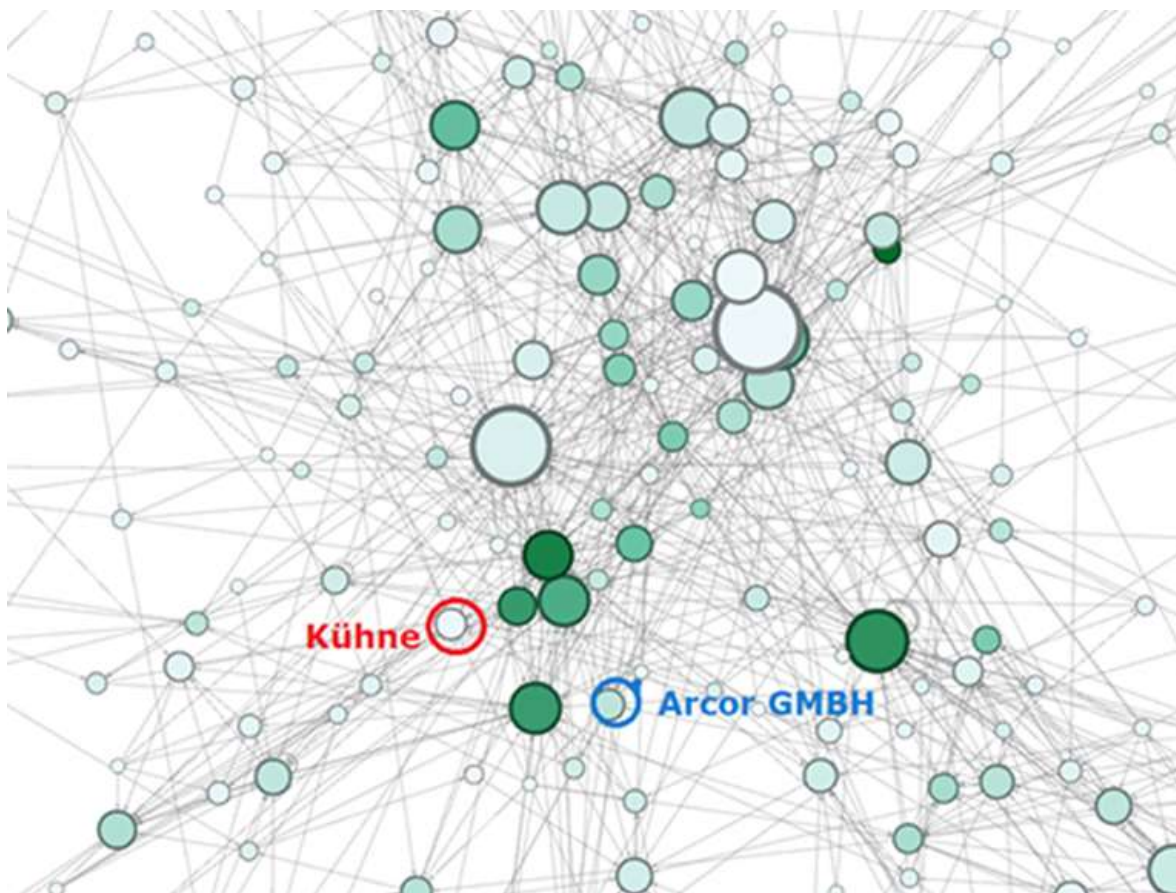


Automated legal information retrieval: Legislation

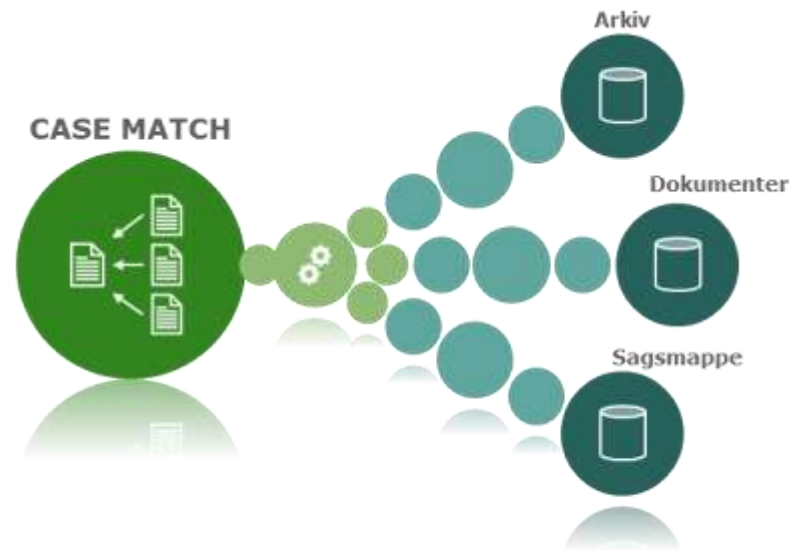
The screenshot shows the 'Retsinformation' website interface. At the top, there is a search bar with the text 'persondataloven' entered. Below the search bar, there are several search suggestions and results:

- A search bar with the text 'persondataloven' and a magnifying glass icon.
- A suggestion: 'Søg efter **persondataloven** i Regler'.
- A suggestion: 'Søg efter nøjagtigt udtryk "**persondataloven**" i Regler'.
- A result: 'Gå direkte til **LOV nr 429 af 31/05/2000** - Persondataloven' with a 'historisk' link.
- A result: 'Gå direkte til **BEK nr 206 af 11/03/2011** - Bekendtgørelse om elektronisk afregning med offentlige myndigheder'.
- A result: 'Gå direkte til **VEJ nr 9607 af 29/06/2017** - Vejledning om offentlige myndigheders udveksling af personoplysninger som led i den koordinerede myndighedsindsats over for organiseret og alvorlig kriminalitet, herunder særligt rocker- og bandekriminalitet'.
- A result: 'Mener du "**persondataloven**"' with a '(popularitet)' link.

Automated legal information retrieval: Case law: network analysis



Automated legal information retrieval: Case law: Natural Language Processing



Information retrieval (case law) before and after Natural Language Processing

Before (manual search)

- ▶ Human memory - individual and collective
- ▶ Key-word or category search
- ▶ “Gold” standards (go-to cases)

After (automated match)

- ▶ NLP model compares new cases against all old cases
- ▶ NLP model calculates similarity over entire document texts
- ▶ NLP rank previous documents

From information retrieval to decision support

- ▶ Manual decision making
- ▶ ...
- ▶ Using prior case decisions as **inspiration** for new decisions
- ▶ Using prior case decisions to **recommend** decisions for new similar cases
- ▶ Using prior case decisions as **templates** for decisions in new similar cases
- ▶ Using prior case decisions to **auto-draft** for decisions in new similar cases
- ▶ ...
- ▶ Automated decision making

Automation: Ills and remedies

The fear of alienation:

- ▶ Lack of transparency and explainability
- ▶ Lack of empathy

The fear of loss of control

- ▶ Biased decision-making
- ▶ Automation will remove reasoning

The comfort of familiarity

- ▶ Existing explainability requirements will be upheld
- ▶ Upholding individual assessment (no profiling of humans)

The comfort of human command

- ▶ Impartiality policy
- ▶ Automation bias removal policy

Conclusion: Tectonic plates or grains of sand?

- ▶ AI is a significant technology which impacts broadly across society
- ▶ But AI has (so far) not fundamentally transformed our society
- ▶ No general AI
- ▶ Technological advancement is slower than predicted
- ▶ Legal Tech is growing in importance
- ▶ It mainly supports trivial tasks
- ▶ But the future is ...



Thank you

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