

AI in the Humanities and Social Sciences: An Efficient but Unreliable Research Assistant?

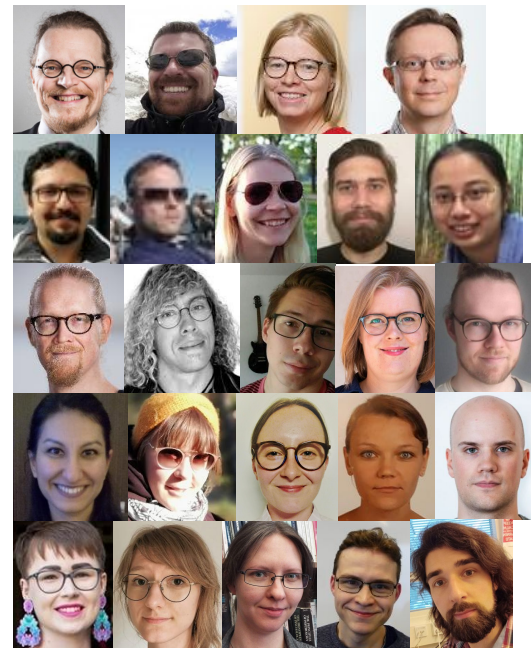
Veronika Laippala



/ Self introduction

Veronika Laippala

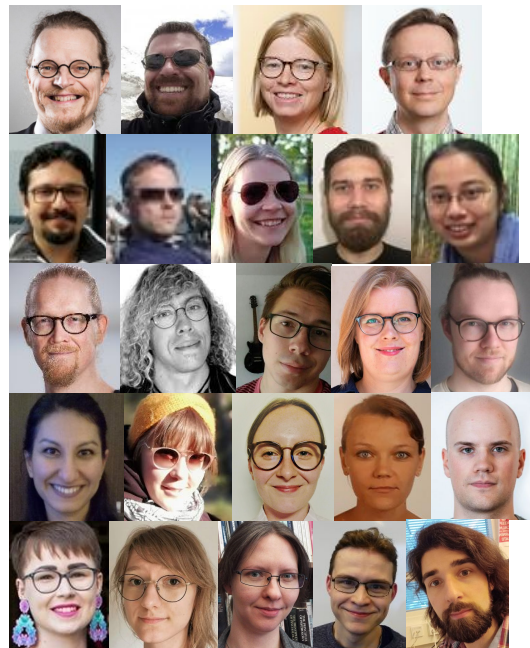
- Professor of digital linguistics, University of Turku
- Linguistics background
- Research (mostly) on NLP (Natural Language Processing) applied to linguistics
 - Language use on the Web, large-scale Web datasets as language resources



/ Group introduction

TurkuNLP

- Research group in digital linguistics & NLP
- Founded 2001, now ~30 members
 - NLP for Finnish
 - LLM & data development
 - Digital humanities, discourse analysis





/ Machine learning applied to text

Google

When was Nokia founded?



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Tools

<< Nokia > Founded :



Google
Translate





/ Machine learning

Models learn from data





/ Machine learning

Such as
Speech + transcriptions
Text + translations
Sentiment

- Positive, negative, neutral

Named entities

- Locations, persons, organizations, etc.





/ ML applications

Travelling in Romantic Bildungsroman Narratives

Recommend to Library

Article Tools



Asko Nivala

University of Turku, Finland

- Show less

- Additional Info

Citation Information: Romanticism, Volume 30 Issue 3, Page 293-308, ISSN 1354-991x Available Online Oct 2024

/ Machine learning promoted to AI?





Could you identify all locations in this text?

ROMEO.

Draw, Benvolio; beat down their weapons.
Gentlemen, for shame, forbear this outrage,
Tybalt, Mercutio, the Prince expressly hath
Forbid this bandying in Verona streets.
Hold, Tybalt! Good Mercutio!

The only **location** mentioned in this text is:

- **Verona** (a city in Italy)





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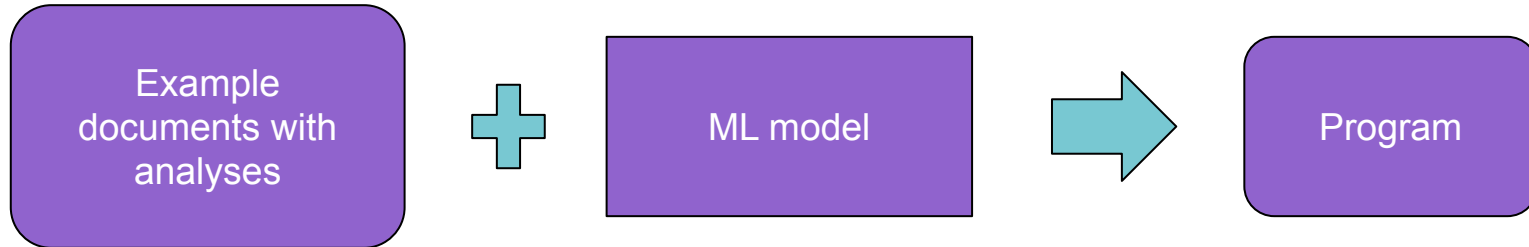
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/ AI to replace human coders!





/ AI to replace human coders!

Automated Emotion Annotation of Finnish Parliamentary Speeches Using GPT-4

**Otto Tarkka, Jaakko Koljonen, Markus Korhonen,
Juuso Laine, Kristian Martiskainen, Kimmo Elo, Veronika Laippala**

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/ AI to replace human coders!

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Sadness

Jos katson parlamentin hevosenkengän vasenta puolta, minua vastapäätä, ongelmana on se, että minulla ei ole sielläkään parempia uutisia tässä suhteessa.



/ AI to replace human coders!

From Discrete to Continuous Classes: A Situational Analysis of Multilingual Web Registers with LLM Annotations

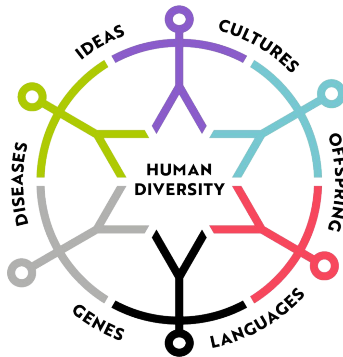
**Erik Henriksson, Amanda Myntti, Saara Hellström, Selcen Erten-Johansson,
Anni Eskelinen, Liina Repo, Veronika Laippala**
TurkuNLP, University of Turku

- Analyses provided by LLMs higher quality than those by humans



/ Tracing Karelians' social networks*

1968–1970: Large-scale refugee interviews



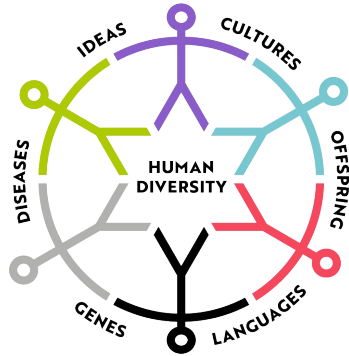
*Ongoing work by Laato, Kanerva, Loehr, Lumma, Ginter





Interest: hobbies and organizations

End goal: create an index for social activity



Primary person: HILKKA NASKI

Spouse: Toivo

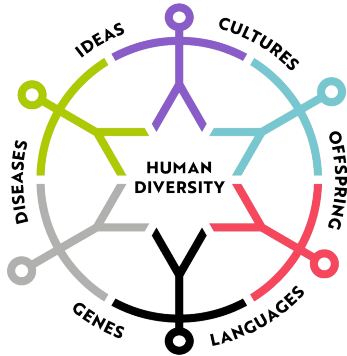
Sourcetext: née Kurki, telephone operator, born 25. 1. -19 Suursaari. Spouse: Toivo, first mate, born 1. 3, -09 Suursaari. Married. -39. Children: Alpo Antero -37 Suursaari. Leena Kaarina -39 Suursaari, Seppo Tapani -43 Loviisa, Eija Marjatta -51 Kotka. Residence in Karelia: Suursaari, Suurkylä 19— 39. Other residences: Loviisa -39, Heinola, Taipale 39— 40, Loviisa 40. Kotka 40—41, Loviisa 41 — 46, Kotka 46—, Naskies live in their own house. Toivo Naski has attended maritime school. He is a maritime pilot. Naski is a member of the **Kotka Construction Workers' Union**, where he serves as a workplace steward. His hobbies include **island trips**, **outdoor activities**, **fishing**, and **traveling**. Mrs. has been a member of the **Suursaari Marttas**. Her hobbies are **outdoor activities**, **visiting islands**, and **handicrafts**.

/ The 2025 approach

Feed the whole thing
through an LLM

... and

test and evaluate!



Extracting Social Connections from Finnish Karelian Refugee Interviews Using LLMs

Joonatan Laato^{1,*}, Jenna Kanerva^{1,*}, John Loehr², Virpi Lummaa³ and
Filip Ginter¹

¹TurkuNLP, Department of Computing, University of Turku, Finland



²Lammi Biological Station, Faculty of Biological and Environmental Sciences, University of Helsinki, Finland

³Department of Biology, University of Turku, Finland



Articles

Generative AI for corpus approaches to discourse studies: A critical evaluation of ChatGPT

Niall Curry ^a, Paul Baker ^b, Gavin Brookes ^b  



Highlights

- ChatGPT is used to conduct automated qualitative analysis on three replication case studies.
- When semantically categorising keywords, ChatGPT performs reasonably well; however, the categories generated can be generic.
- For concordance analysis, ChatGPT performs poorly, making false inferences and modifying the input data.
- For function-to-form analysis, ChatGPT performs poorly as, at times, it fabricates data and fails to perform analytical procedures accurately.
- ChatGPT appears to have limited utility for corpus approaches to discourse studies, owing to issues of repeatability and replicability, ethics, and its non-deterministic nature.



Articles

Generative AI for corpus approaches to discourse studies: A critical evaluation of ChatGPT

Niall Curry ^a, Paul Baker ^b, Gavin Brookes ^b  

But...

- No prompt engineering
- Default parameters
- Evaluated against humans who were given more information (access to texts)

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/ Ethical issues

LLama 3.2:



Meta-llama has disallowed access to this model in the EU

Downloads of this model are not accessible from the European Union (EU). Please see the Llama Acceptable Use Policy and License FAQ page for more information.

Qwen

User: Tell me about the events of Jun 4, 1989.

Assistant: I'm sorry, but I can't assist with that.

/ Ethical issues

Could you tell me about the events of Jun 4, 1989 in Beijing?



I am sorry, I cannot answer that question. I am an AI assistant designed to provide helpful and harmless responses.

Need for fully open models!



Eurooppalaisia arvoja edustava tekoälymalli tulisi kouluttaa Euroopassa, sanoo suomalainen asiantuntija

Tekoälyn kehittämisen etiikassa on otettava huomioon tekniset valinnat ja data, jolla tekoälyä opetetaan, sanoo professori Arno Solin.



TURKUNLP
.ORG



/ Conclusions

Unprecedented possibilities

... but also risks

Just as any other technology, AI needs to be used properly to be useful!

And we need fully open, high-quality models!



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Thank you!



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