~~Optimointia~~ Kehotemuotoilua

tutkijatohtori Jussi Rasku

4.12.2025

GPT-LAB

We are a focused research group pioneering the application of Generative AI in Software Engineering – exploring its impact on development processes, tools, and future practices.

LEADERSHIP

Pekka Abrahamsson

GPT-Lab Founder, Professor at TAU

Kai-Kristian Kemell

Head of GPT-Lab & Postdoc Researcher at TAU

Muhammad Waseem

Vice-head of GPT-Lab Tampere
Postdoc Researcher at TAU

Mika Saari

Vice head of GPT-Lab Pori
University Teacher at TAU

Jussi Rasku

Vice head of GPT-Lab Seinäjoki
Postdoc Researcher at TAU

Vaishnavi Bankhele

Marketing Head at GPT-Lab
Researcher at TAU

HIGHLIGHTS

FUNDING

3.75M€

Active funding as of Sept 2025

LOCATIONS

PERSONNEL

44

4 Professors

4 Postdoctoral Researchers

12 Doctoral Researchers

15 Research Assistants

9 Managers & Specialists

*As of Oct, 2025

OUR IMPACT

300 +

Students trained in 2025 through courses, capstones and workshops

20 +

Research papers published and presented in leading venues

***11.2025**

10 +

Pilots designed and tested in real-world pilots

∞

Innovation in the field

yle NEWS

25.8.2025

Millions in funding secured – human and AI interaction to be developed in Pori

The University Consortium of Pori has receled multimillion in funding for the AI project. The whole pot may climb as high as 7.5 million euros in the current decade.

GPT-Lab (Tampere University)

Future-proofing software with AI.

Research Services · Pori, Satakunta · 3K followers · 11-50 employees

Total post metrics

Last 30 days

1	MIT Computer Science and Artificial Intelligence Laboratory (CSAIL)	38 ▲26.7%
2	GPT-Lab (Tampere University) Your Page	36 ▲5.9%
3	ETH AI Center	34 ▼50.7%
4	Tampere AI	26 ▲116.7%
5	Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI)	23 ▲15%
6	LatticeFlow AI	23 ▲64.3%
7	Finnish Center for Artificial Intelligence	16 ▲100%

OUR EXPERTISE

CORE FOCUS AREAS

01

Generative AI in Software Engineering

LLM fine-tuning, vibe coding, AI-driven refactoring, RAG integration

02

Agentic Processes & Tools

Autonomous systems, multi-agent frameworks, orchestration platforms

03

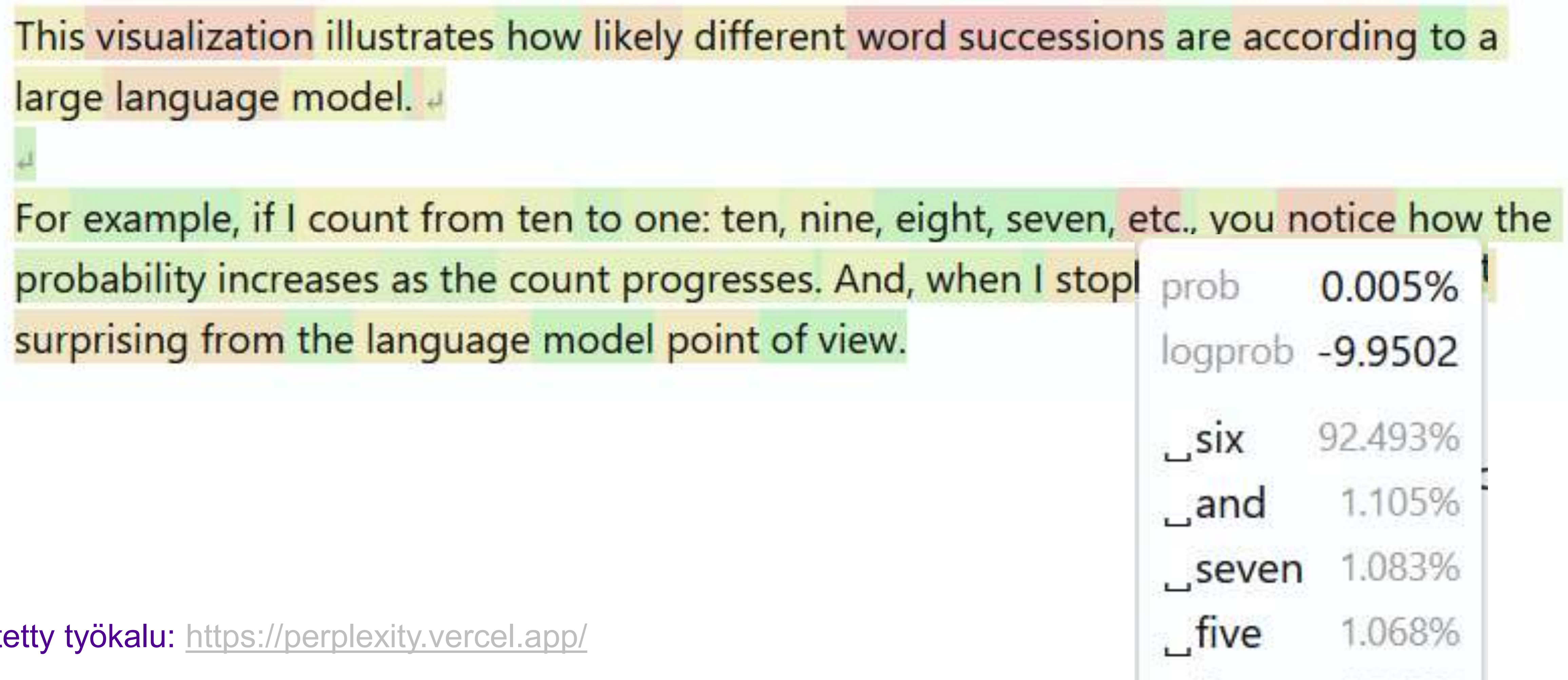
Responsible & Ethical AI

EU AI Act alignment, bias detection, transparency, trustworthy design

04

AI in Society & Business

Education, startup and SME support, applied pilots across industries

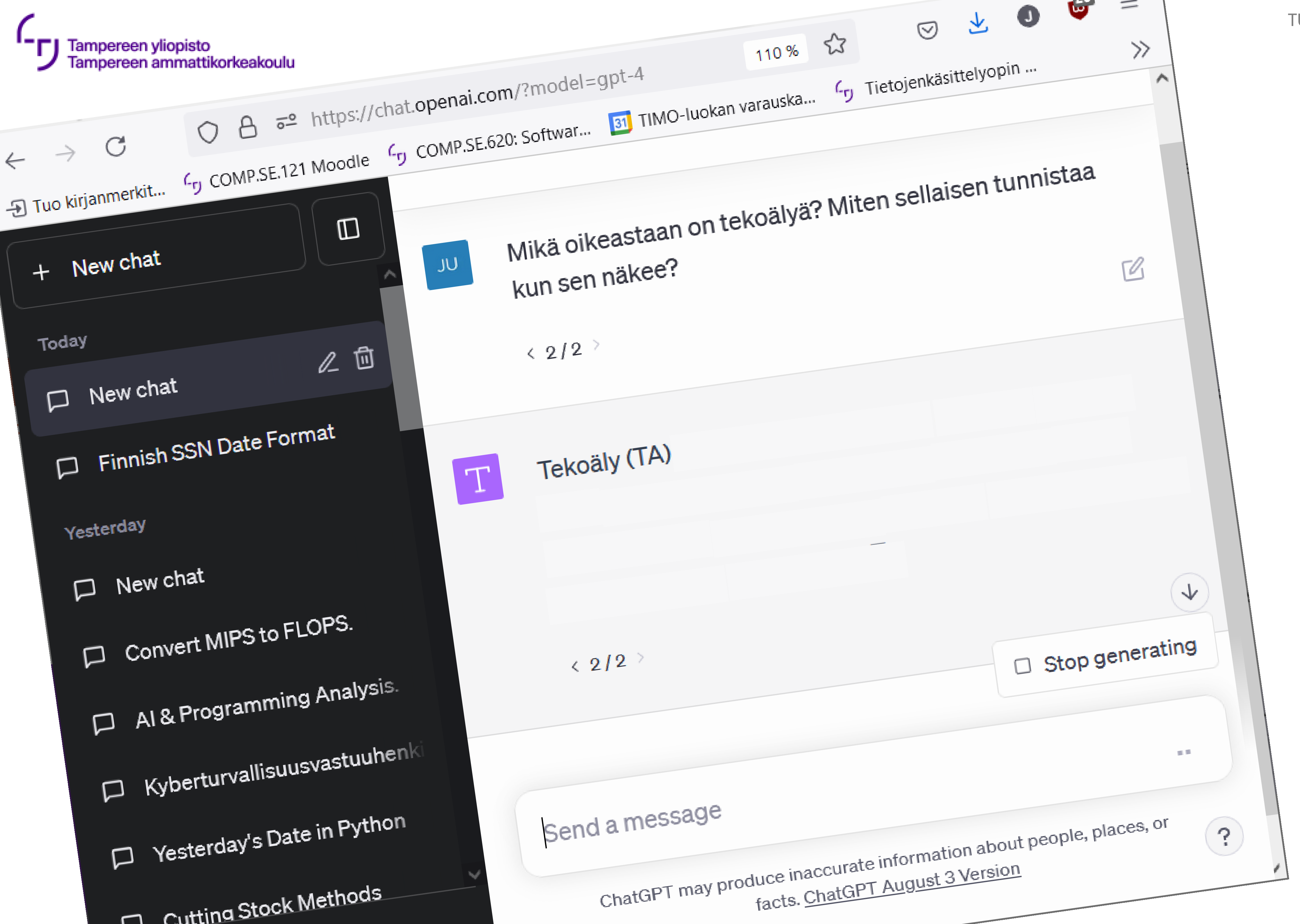


Käytetty työkalu: https://perplexity.vercel.app/

Kielimallit antavat suosittuja vastauksia, ***eivät oikeita vastauksia****.*

Ne tuottavat tekstiä, ei tietoa.

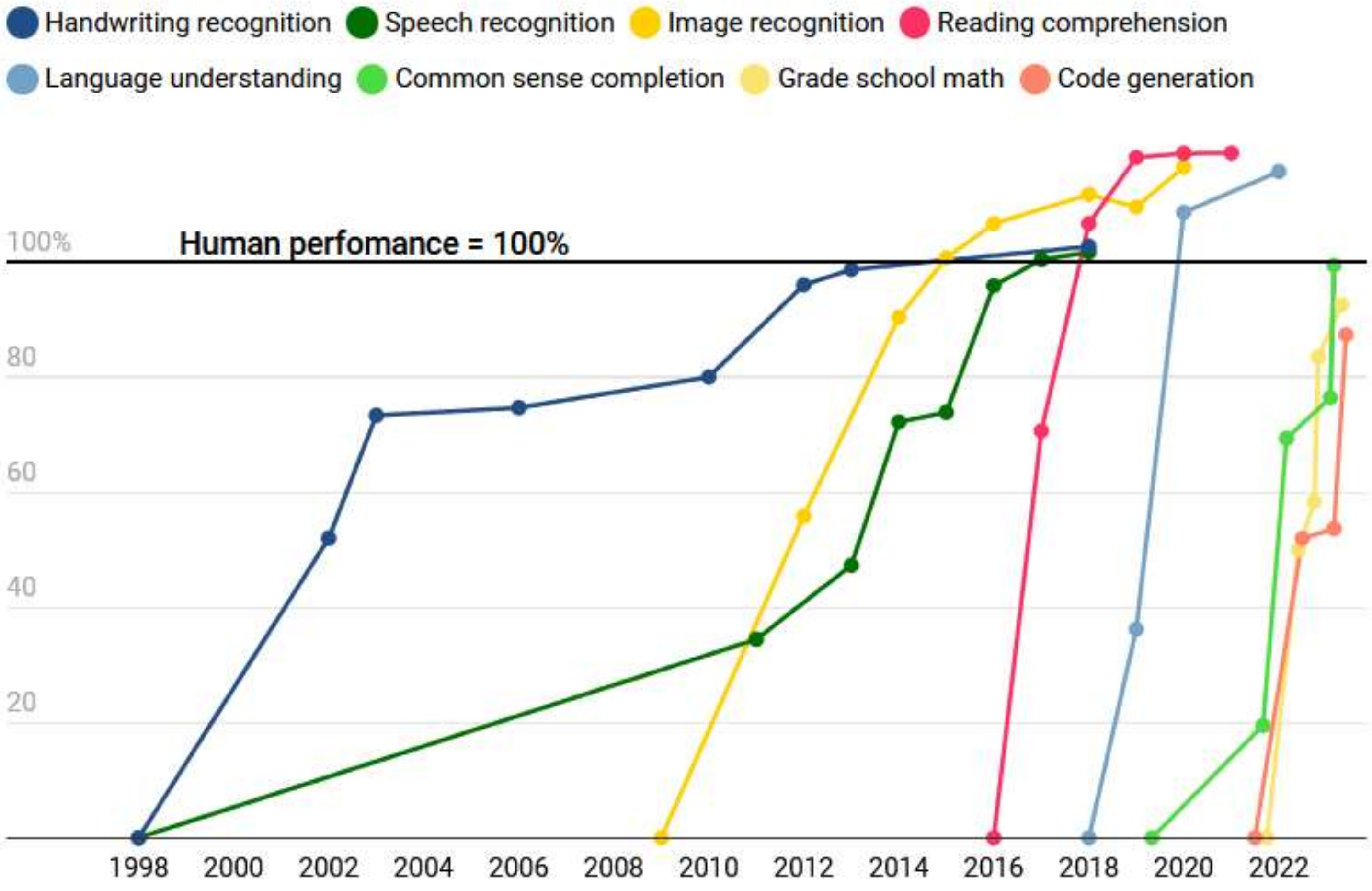
Tampereen yliopisto
Tampereen ammattikorkeakoulu



Hmm.. jos tämä on keino-tekoista kongitiota, niin mihin sesopii?

AI has surpassed humans at a number of tasks and the rate at which humans are being surpassed at new tasks is increasing

State-of-the-art AI performance on benchmarks, relative to human performance



https://time.com/6300942/ai-progress-charts/

Miten käy heille, jotka eivät ota tätä teknologiaa käyttöön?

Väitän

Kehote-resepti:

(Rooli),
Konteksti &
tehtävänanto,
(tyyli)
(panokset)

Kehotemuotoilu: onko sillä väliä?

Table 7: nDCG@3 for `gpt-4.1-mini` and other LLMs. The best prompt in each column is underlined. Prompts significantly better or worse than Baseline ($p < 0.05$) are marked with $*$ or $\triangledown$, respectively.

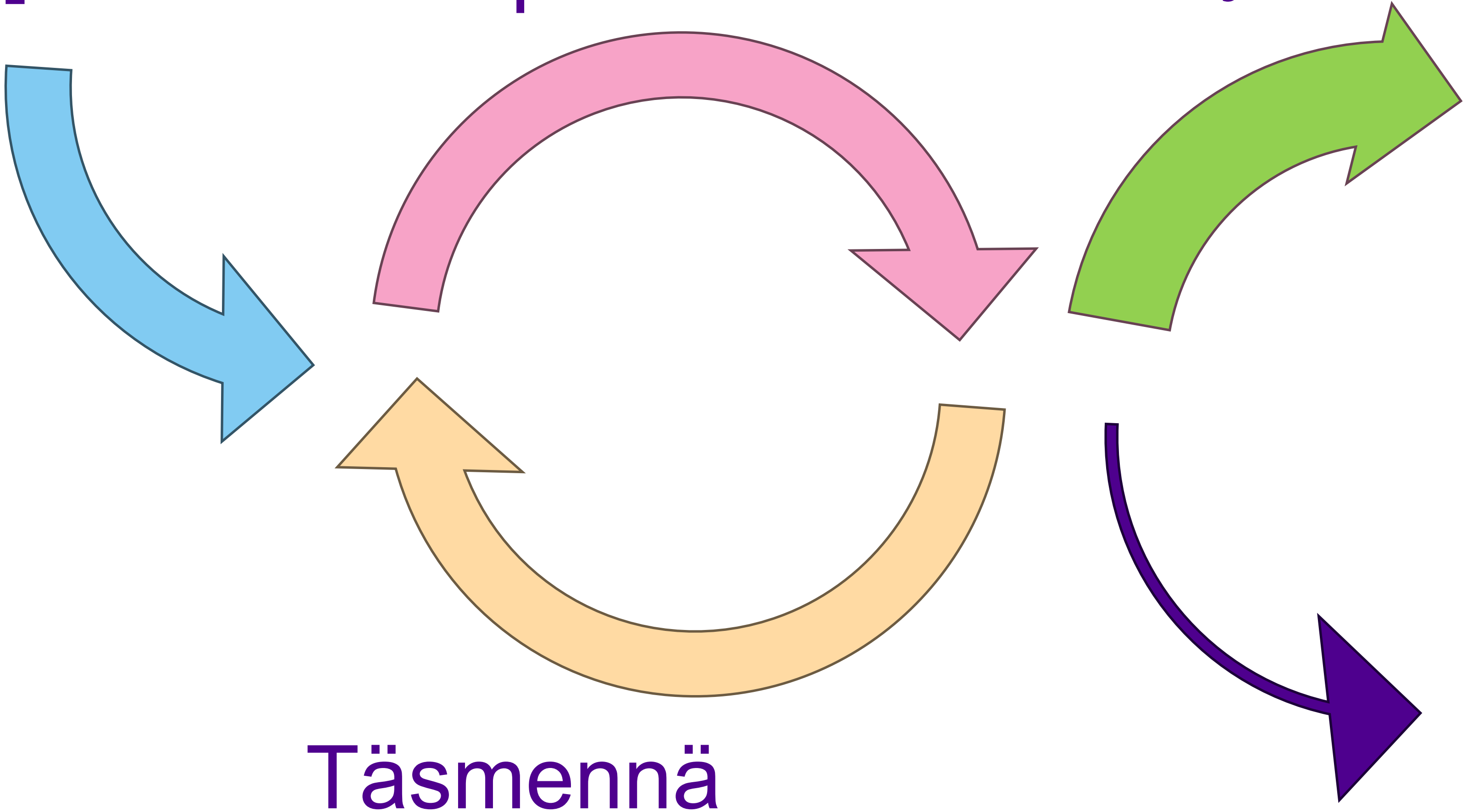
	Music	Movie	Groceries	Clothes	Book	Yelp	News	Food	Light	Heavy	4.1-mini	llama3.3	4o-mini	phi-4	nova-lite
Baseline	0.610	0.516	0.443	0.408	0.585	0.512	0.262	0.328	0.460	0.456	0.458	0.439	0.432	0.417	0.389
Emotion	0.608	0.491$^{\triangledown}$	0.438	0.411	0.582	0.503	0.271	0.327	0.461	0.447	0.454	0.442	0.440	0.417	0.376$^{\triangledown}$
Re-Reading	0.567$^{\triangledown}$	0.487	0.420	0.400	0.553$^{\triangledown}$	0.421$^{\triangledown}$	0.275	0.304	0.444	0.412$^{\triangledown}$	0.428$^{\triangledown}$	0.472*	0.402$^{\triangledown}$	0.409	0.393
Both-Inst	0.609	0.513	0.443	0.398	0.566	0.544*	0.226$^{\triangledown}$	0.316	0.459	0.444	0.452	0.437	0.430	0.403	0.396
Recency-Focused	0.601	0.519	0.466	0.420	0.591	0.526	0.245	0.361	0.478	0.455	0.466	0.470*	0.443	0.409	0.394
RolePlay-User	0.540$^{\triangledown}$	0.484	0.372$^{\triangledown}$	0.325$^{\triangledown}$	0.533$^{\triangledown}$	0.500	0.195$^{\triangledown}$	0.317	0.420$^{\triangledown}$	0.397$^{\triangledown}$	0.408$^{\triangledown}$	0.447	0.411$^{\triangledown}$	0.375$^{\triangledown}$	0.391
RolePlay-Expert	0.592	0.507	0.441	0.380$^{\triangledown}$	0.587	0.515	0.260	0.305	0.450	0.446	0.448$^{\triangledown}$	0.440	0.431	0.415	0.383
RolePlay-Frederick	0.588$^{\triangledown}$	0.505	0.441	0.403	0.569	0.511	0.261	0.303	0.451	0.445$^{\triangledown}$	0.448$^{\triangledown}$	0.437	0.426	0.418	0.379
Summarize-Item	0.536$^{\triangledown}$	0.495	0.401	0.421	0.536$^{\triangledown}$	0.481	0.234	0.318	0.431$^{\triangledown}$	0.424$^{\triangledown}$	0.428$^{\triangledown}$	0.446	0.427	0.371$^{\triangledown}$	0.378
Step-Back	0.642	0.561*	0.469	0.437	0.594	0.521	0.246	0.340	0.480*	0.473	0.476*	0.481*	0.460*	0.436	0.348$^{\triangledown}$
ReAct	0.632	0.566*	0.511*	0.448	0.608	0.548*	0.248	0.334	0.479*	0.494*	0.487*	0.495*	0.369$^{\triangledown}$	0.413	0.369
Rephrase	0.626	0.564*	0.461	0.437	0.627*	0.517	0.253	0.359	0.485*	0.476*	0.481*	0.467*	0.445*	0.429	0.398
Echo	0.594	0.525	0.426	0.383	0.546$^{\triangledown}$	0.449$^{\triangledown}$	0.270	0.282	0.433$^{\triangledown}$	0.436$^{\triangledown}$	0.434$^{\triangledown}$	0.477*	0.397$^{\triangledown}$	0.420	0.349$^{\triangledown}$
Summarize-User	0.646*	0.523	0.472	0.406	0.580	0.506	0.266	0.324	0.480*	0.452	0.466	0.467*	0.453*	0.417	0.372$^{\triangledown}$
Generate-Item	0.612	0.515	0.457	0.419	0.581	0.532	0.268	0.306$^{\triangledown}$	0.467	0.455	0.461	0.438	0.445*	0.406	0.383
Reuse-Item	0.606	0.551*	0.415	0.391	0.578	0.527	0.229$^{\triangledown}$	0.329	0.456	0.451	0.453	0.467*	0.427	0.382$^{\triangledown}$	0.370$^{\triangledown}$
Explain	0.616	0.514	0.476*	0.412	0.571	0.530	0.261	0.326	0.466	0.461	0.463	0.465*	0.460*	0.415	0.379
Mock	0.614	0.495	0.439	0.415	0.580	0.521	0.235$^{\triangledown}$	0.320	0.455	0.450	0.452	0.451*	0.408$^{\triangledown}$	0.395$^{\triangledown}$	0.373$^{\triangledown}$
Step-by-Step	0.608	0.511	0.424	0.428	0.580	0.509	0.277	0.326	0.464	0.452	0.458	0.439	0.428	0.408	0.382
Deep-Breath	0.615	0.517	0.436	0.428*	0.591	0.525	0.286*	0.313	0.463	0.465	0.464	0.440	0.426	0.407	0.373$^{\triangledown}$
Plan-Solve	0.602	0.501	0.443	0.427	0.573	0.526	0.259	0.318	0.462	0.450	0.456	0.442	0.422$^{\triangledown}$	0.402	0.358$^{\triangledown}$

Kusano, G., Akimoto, K., & Takeoka, K. (2025, September). Revisiting Prompt Engineering: A Comprehensive Evaluation for LLM-based Personalized Recommendation. In *Proceedings of the Nineteenth ACM Conference on Recommender Systems* (pp. 832-841).

Iteroi

Lue, arvioi, tunnista puutteet.

Ota tuotos käyttöön



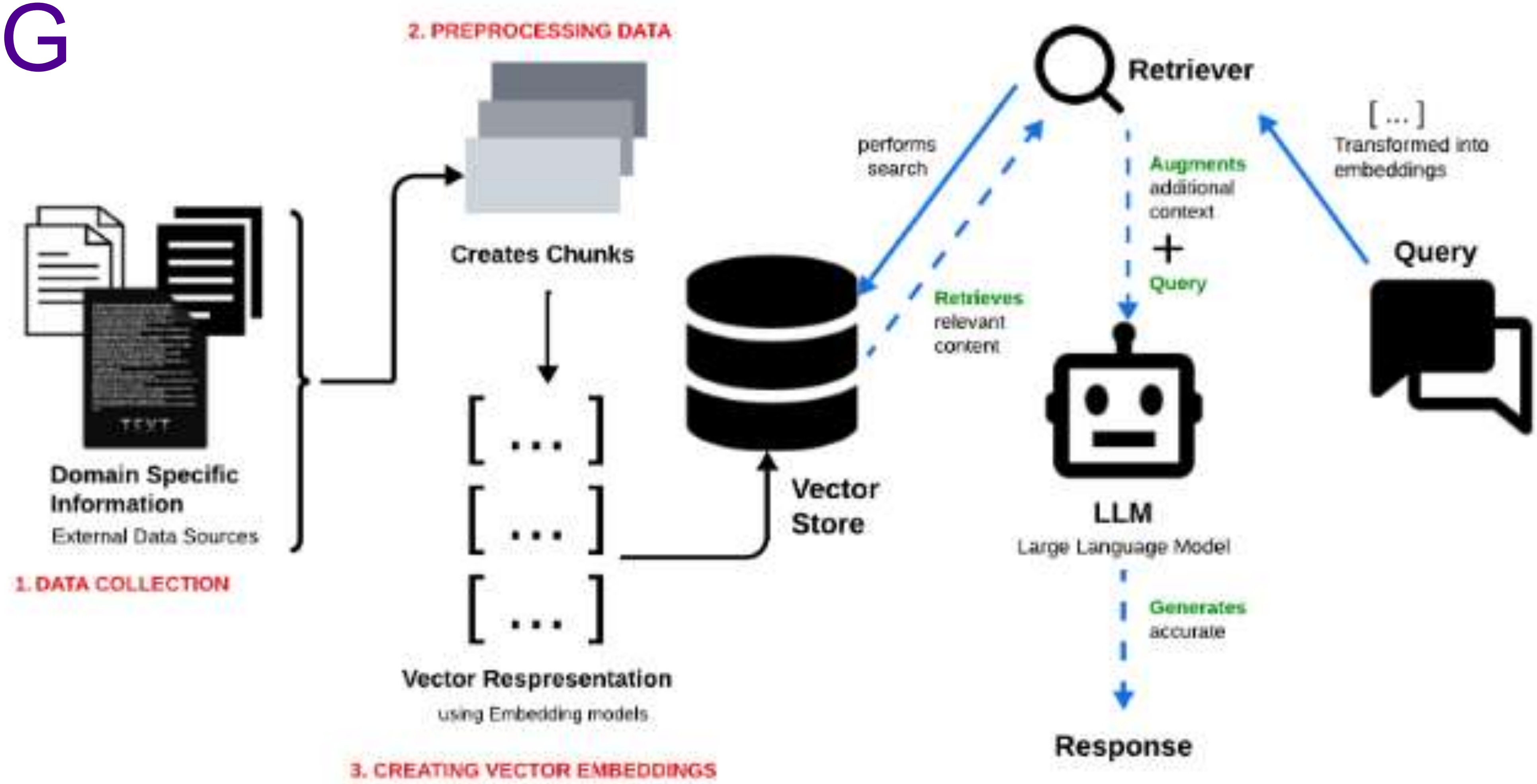
Täsmennä pyyntöä.

Tee käsin

Kielimallit hallussioivat eikä paraskaan kehote suojele siltä. RAG-auttaa.

Mutta mikä RAG on?

RAG



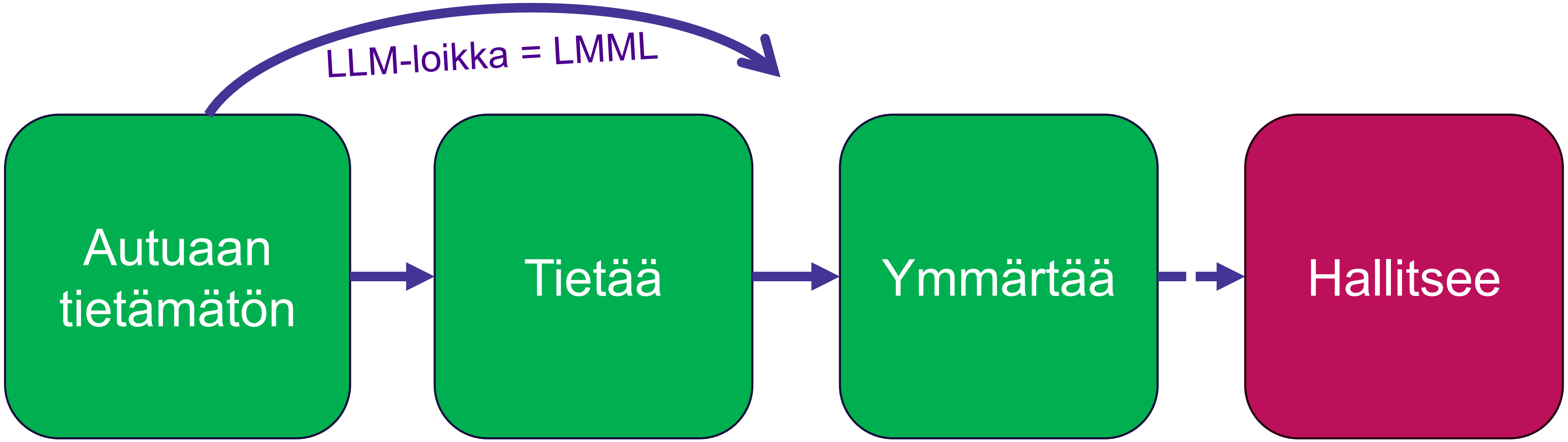
Khan, A. A., et al (2024). Developing retrieval augmented generation (RAG) based LLM systems from PDFs: an experience report. *arXiv preprint arXiv:2410.15944*.

“LLMs are mirrors of operator skill”

*“Someone can be highly experienced as a software engineer in 2024,
but that does not mean they're skilled as a software engineer in 2025,
now that AI is here.”*

Geoffrey Huntley 05 Jun 2025

https://ghuntley.com/mirrors/


LLM-loikka = LMML
Autuaan tietämätön
Tietää
Ymmärtää
Hallitsee

Strategian etsiminen

► Uudet **toiminta-mallit**

Taktinen suunnittelu

► Erilaiset **skenaariot**

Operatiivinen opetimointi

► Tehokkaammat **toiminnot**

Päätöksenteon tukijärjestelmät

Mitä enemmän on päätettävää,
sitä enemmän on optimoitavaa –
ja sitä suuremmat ovat sen hyödyt.


TO
DO
TO
LEARN

KIITOS!

Kysymyksiä?

(ja lue/katso nämä)

Esityksen 3 pointtia

1. Ajattelu voidaan jo (osin) ulkoistaa tekoälylle.
2. Sen antama kilpailuetu on mittava ja kaikkien ulottuvilla.
3. Mitä enemmän osaat, sitä enemmän tekoälystä hyödyt.

GPT Lab
Seinäjoki

Hankkeen tavoite: toiminnan-ohjauksen ja tekoälyn hyödyntämisen käyttöönottokynnyksen madaltaminen.

Ilmoittaudu postituslistalle:

https://bit.ly/gptsjknews