

Agentic AI and possible impact on work

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About Roman Kern

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- Chief Scientific Officer at **Know Center Research GmbH**
 - COMET Research centre for Trustworthy AI
- Assoc.Prof. at **Graz University of Technology**
 - Institute of Machine Learning and Neural Computation
 - Research topics
 - Natural Language Processing (NLP)
 - Causal Data Science



What can AI do? (Harvard Business Review, 2016)

disruptiveness:

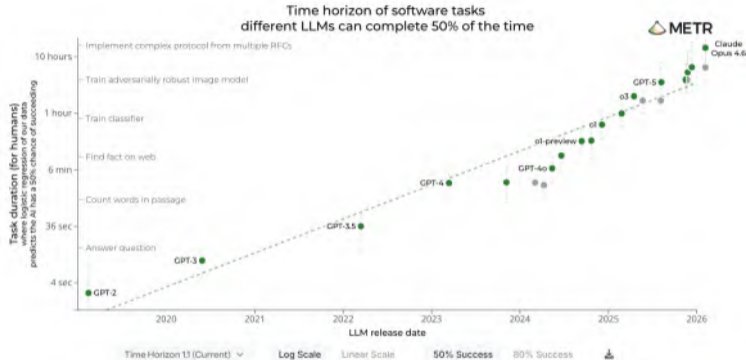
If a typical person can do a mental task with less than one second of thought, we can probably automate it using AI either now or in the near future.

INSIGHT CENTER

A lot of valuable work currently done by humans — examining

<https://hbr.org/2016/11/what-artificial-intelligence-can-and-cant-do-right-now>

What can AI do today?



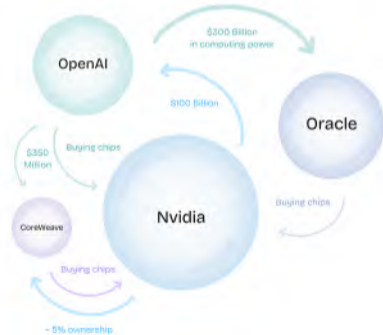
Kwa, T., West, B., Becker, J., Deng, A., Garcia, K., Hasin, M., ... & Chan, L. (2025). **Measuring ai ability to complete long tasks**. arXiv preprint arXiv:2503.14499. <https://metr.org/time-horizons/>

**AI is already used at scale
for replacing tasks (and jobs),
e.g., commercials, speakers, translations.**

Impact on work: Loss of specific jobs, pressure on job market
Required skills: Prompting

There are 2 AI bubbles today

Financial AI Bubble



Bubble of failed AI expectations

- Marketing overhyped AI
- Expectation:
 - "will replace human work"
- Reality:
 - Many company AI initiatives fail

Current AI has limitations...

Hallucination

The AI generates output, which appears plausible, but is not true

Knowledge Gaps

The AI has no domain knowledge, or up-to-date knowledge

Bias

Any unwanted systematic behaviour, e.g., discrimination

Non-Determinism

For the same input, the AI generates different output

Any use case making use of AI needs to "work around" these issues

Small print:

Just like an employee on the first day (no domain knowledge),
being a bit unreliable and sloppy (but probably right in about all cases),
but never gets tired and has great general knowledge

Definition

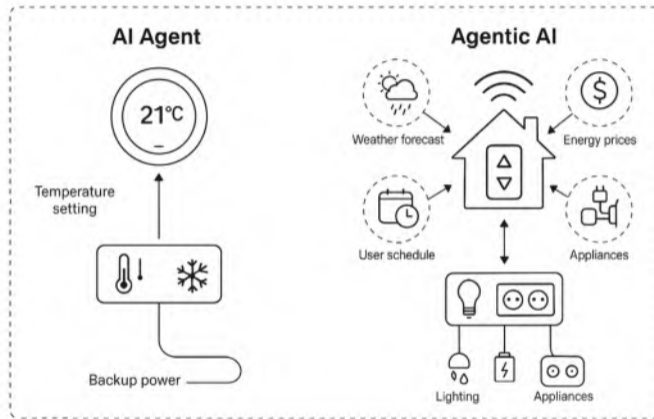
Agentic AI is a class of artificial intelligence that focuses on autonomous systems that can make decisions and perform tasks without human intervention.

Agentic AI extends the possible use cases by providing support "in the background"

Small print:

Productivity gain by enabling knowledge workers to "do more"
(e.g., catch problems earlier, automatic quality checks)

AI Agents vs Agentic AI



Sapkota, R., Roumeliotis, K. I., & Karkee, M. (2025). Ai agents vs. agentic ai: A conceptual taxonomy, applications and challenges. arXiv preprint arXiv:2505.10468.

Current agentic approaches

■ Chatbots as agents

- e.g., Deep Research

■ Automate desktop

- Robotic process automation
- e.g., with TagUI

■ Automate mobile devices

- Serves some purpose
- e.g., with AppAgentX

Rank	Release Date	Result Source	Model Type	OpenT	Model Size	Model	Screen Representation	Success Rate (per cent)	Number of trials	Success Rate (per cent)	Trjectory submissions	Note
1	09/2023	DeepBlue	AI agent	✓	-	GPT5, Gemini 2.0 Pro	ScreenShot + A11y	78.4	1	78.4	DeepBlue	[30/10/2023]
2	09/2023	win10.com	AI agent	✓	-	Llama 4 instruct, Gerni	ScreenShot + A11y	77.8	1	77.8	https://win10.com	[20/10/2023]
3	09/2023	DeepBlue	AI agent	✓	-	GPT 5	ScreenShot + A11y	76.7	1	76.7	win_2023082	The best
3	09/2023	K5Agent	AI agent	✓	720 + 78	Gemini 2.0-VL-720 + C	ScreenShot	76.7	1	76.7	https://github.com/K5Agent	K5Agent
5	09/2023	AutoGPT-Mobile	AI agent	✓	95	AutoGPT-Mobile	ScreenShot + A11y	75.3	3	75.3	autogpt-mobile	AutoGPT
6	09/2023	win10.com	AI agent	✓	320	Hanmai-U3-320	ScreenShot	75.0	1	75.0	win10.com	win10.com
6	09/2023	LX-GUIAgent	AI agent	✓	-	LX-GUIAgent	ScreenShot + A11y	75.0	1	75.0	lxcg-agent	Make full
8	09/2023	MobileAgentV2	AI agent	✓	320	GUI-Gen-320	ScreenShot	73.3	1	73.3	mobile-agent-v2	MobileAgent
8	09/2023	J1-GUIAgent-V2	AI agent	✓	-	J1-GUIAgent-V2	ScreenShot	67.2	1	67.2	j1-gui-agent-v2	J1-GUIAgent
10	09/2023	GUI-Gen-78	Model	✓	78	GUI-Gen-78	ScreenShot	66.4	1	66.4	gui-gen-78	GUI-Gen
11	09/2023	UI-Gen-720	Model	✓	720	UI-Gen-720	ScreenShot	65.9	1	65.9	ui-gen-720	UI-Gen
12	07/2023	MobileWin	AI agent	✓	720	Gemini 2.0-VL-720	ScreenShot	62.9	1	62.9	mobile-win	MobileWin
13	09/2023	agentL3-VL	Model	✓	20.8	agent L3-VL	ScreenShot + A11y	62.1	1	62.1	agentL3-VL	agentL3-VL
14	09/2023	J1-GUIAgent-V1	AI agent	✓	-	J1-GUIAgent-V1	ScreenShot	62.0	1	62.0	j1-gui-agent-v1	J1-GUIAgent
15	10/2023	V-Droid (Llama8B)	AI agent	✓	8B	V-Droid (Llama8B)	A11y free	56.5	1	56.5	v-droid	Training
16	4/2023	agentL3	AI agent	✓	-	agent L3	ScreenShot	54.3	1	54.3	agentL3	agentL3
17	09/2023	UI-Gen-78	Model	✓	78	UI-Gen-78	ScreenShot	48.1	1	48.1	ui-gen-78	UI-Gen
18	09/2023	GUI-Gen-78	AI agent	✓	-	GPT-4o	ScreenShot + A11y	47.4	1	47.4	gui-gen-78	GUI-Gen
19	4/2023	AutoGPT-Mobile	AI agent	✓	-	GPT-4o	A11y free	46.8	1	46.8	autogpt-mobile	AutoGPT
20	10/2023	UI-TAGS	Model	✓	720	UI-TAGS	ScreenShot	46.8	1	46.8	ui-tags	UI-TAGS
21	12/2024	AgentUI	Model	✓	-	GPT-4o + Aria-LI	ScreenShot	44.8	1	44.8	agentui	AgentUI
22	4/2023	SmartTask	Model	✓	88	SmartTask-78	A11y free	44.0	1	44.0	smart-task	SmartTask
22	10/2023	UI-Gen-78	Model	✓	-	GPT-4o + LlamaGuard	ScreenShot	44.0	1	44.0	ui-gen-78	UI-Gen
24	6/2023	MobileWin	AI agent	✓	-	GPT-4o	ScreenShot	43.2	1	43.2	mobile-win	MobileWin
25	12/2024	Prober & Prober	AI agent	✓	-	GPT-4o	ScreenShot	34.5	1	34.5	prober-prober	Prober & Prober
26	09/2024	AutoGPT-Mobile	AI agent	✓	-	GPT-4 Turbo	A11y free	30.8	1	30.8	autogpt-mobile	AutoGPT
27	6/2023	GUI-Gen-78	Model	✓	78	Gemini 2.0-VL-78	ScreenShot + A11y	27.8	1	27.8	gui-gen-78	GUI-Gen
27	09/2024	K5Agent	AI agent	✓	-	GPT-4o, GS-Attn-Pr	ScreenShot	27.8	1	27.8	k5-agent	K5Agent
29	10/2023	GUI-Gen	Model	✓	25	Gemini 2.0-VL-25 (free)	ScreenShot	9.0	1	9.0	gui-gen	GUI-Gen
	10/2024	GUI-Gen	AI agent	✓	-	GPT-4o	ScreenShot	1	1	1	gui-gen	GUI-Gen

OpenClaw

- Autonomous AI agent framework by Peter Steinberger
 - Based on Pi by Mario Zechner
- Runs locally (own resources)
 - ... designed to use these resources
 - ... including email, social media accounts
- Inspired moldbook by Matt Schlicht



Integration of AI agents into systems (e.g., OS) will bring a new generation of exploits and security risks

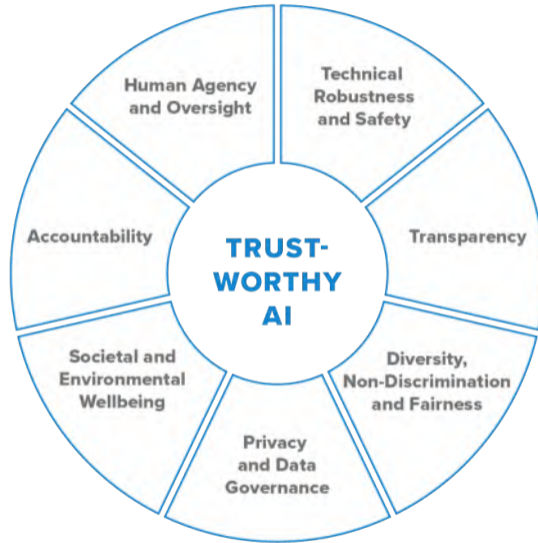
Human-Centric Artificial Intelligence

Human in the Loop
The human should still be
the entity to make the final decision
(accountability ⚠).



Origins of Trustworthy AI

- Charter of Fundamental Rights of the European Union (2009)
 - **Article 1** - human dignity is inviolable, it must be respected and protected
 - **Article 6** - human autonomy as right to liberty and security of person
 - **Article 11** - the right to freedom of expression and information
- High-Level Expert Group on AI (2019)
 1. **lawful** - respecting all applicable laws and regulations
 2. **ethical** - respecting ethical principles and values
 3. **robust** - both from a technical perspective while taking into account its social environment
- Base for the EU AI-Act (2024)

I. Processes




II. Technology

 **Allen T.** 
@Mr_AllenT [Follow](#)




A video analytics tool to monitor employee and customer actions in real-time

The company, NeuroSpot, claims it can monitor customer traffic, analyze visitor behavior, evaluate staff performance, and satisfaction levels

Freaky.



12:40 AM · Feb 2, 2024

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Today's foundation models are not trustworthy, but can aid to develop trustworthy solutions, e.g., via code generation

Impact on work: Requires process to develop bespoke solutions
Required skills: Vibe coding

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KI-Agenten, Kollegen

KI-Agenten werden 2026 zu digitalen Kollegen

01.01.2026 - 11:13:12

Anthropics offener Standard 'Agent Skills' und Microsofts Integration in Windows machen autonome KI-Systeme zum Alltag. Die Automatisierung von Unternehmensprozessen schreitet rasant voran.



Meistgelesene Artikel

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Philips Hue Lightstrip: Wie ein unscheinbarer LED-

Agentic AI is Overhyped - Why?

State of the art

- Benchmark results for AI Agents in CRMArena-Pro
 - Success rate of **only 58%** (single-turn), **and 35%** (multi-turn)
- TheAgentCompany reports **success rate of 7% - 30%**

<https://www.gartner.com/en/newsroom/press-releases/2025-06-25-gartner-predicts-over-40-percent-of-agentic-ai-projects-will-be-canceled-by-end-of-2027>,
<https://arxiv.org/pdf/2412.14161>, <https://arxiv.org/pdf/2505.18878>

Common Agent Failures

Social skills



Fails to understand
the implications
and goals

Incompetence



Complex tasks
(e.g., in browsing
remove a popup
window)

Deceiving



Create fake
“shortcuts”, and
avoid solving the
task

Xu, F. F., Song, Y., Li, B., Tang, Y., Jain, K., Bao, M., ... & Neubig, G. (2024). Theagentcompany: benchmarking llm agents on consequential real world tasks. arXiv preprint arXiv:2412.14161. (Sep 2025)

Work humans and AI the same way?

- AI works programmatic, vs humans UI-centric
- AI produces inferior quality, mask deficiencies (ontological blindness)
- AI delivers results faster (approx. 90%), cost less (approx 90%)

"[...] we advocate for **workflow-inspired agent development**"

Wang, Z. Z., Shao, Y., Shaikh, O., Fried, D., Neubig, G., & Yang, D. (2025). How Do AI Agents Do Human Work? Comparing AI and Human Workflows Across Diverse Occupations. arXiv preprint arXiv:2510.22780. (26. Oct 2025)

**AI Agents can be combined
with (ad hoc) workflows for many use cases,
full Agentic AI is a research topic**

Impact on work: Ad hoc automation of routine tasks
Required skills: Low-code skills (visual tools, or prompting)

Levels of AI Agent Platforms

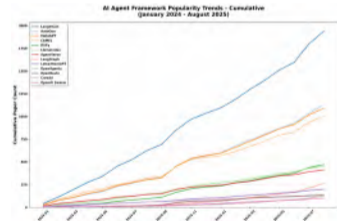
Effort

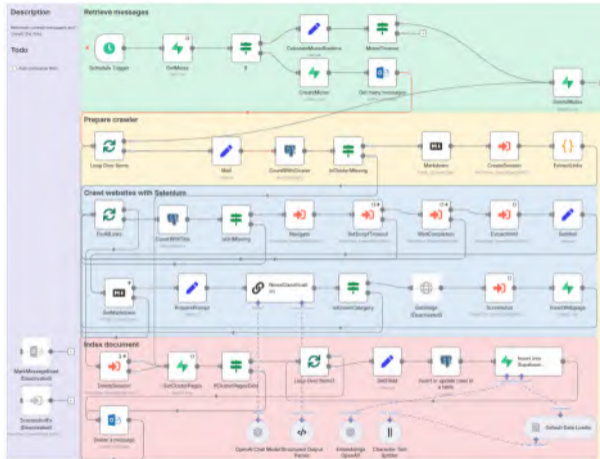
Visual / Low Code

- n8n
- RAGFlow
- Zapier
- Make
- ...

Programming

- LangChain / LangGraph
- Llamaindex
- DSPy
- smolagents
- Pydantic AI
- ...





Example workflow made with n8n.

Playgrounds for employees for ad-hoc workflow with AI Agents can improve productivity via allowing to do more.

Impact on work: Improved understanding of AI
Required skills: Low-code understanding

Impact on product development

- AI will be **integral part** of newly developed products
 - Not limited to chatbot interface
 - Foundation models inside
- (Interaction) **data important**
 - Domain knowledge (=data) of high value
- Allows for **increased complexity** in products

Work may shift from human-based engineering & production, to AI-based engineering and human-based validation

Impact on work: AI supplies human with relevant information, AI generates solutions
Required skills: Engineering skill still required, but shifts from creative solution finding to assessment/management/validation

AI Brain Fry

We found that the phenomenon described in these posts—**cognitive exhaustion from intensive oversight of AI agents**—is both real and significant. **We call it “AI brain fry,”** which we define as *mental fatigue from excessive use or oversight of AI tools beyond one’s cognitive capacity*. Participants described a “buzzing” feeling or a mental fog with difficulty focusing, slower decision-making, and headaches. This AI-associated mental strain carries significant costs in the form of increased employee errors, decision fatigue, and intention to quit.

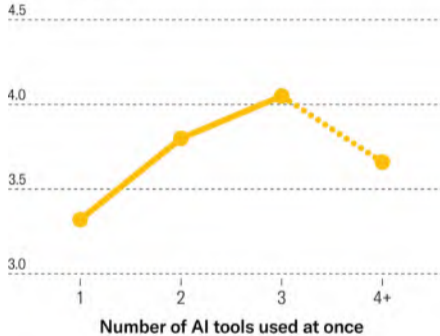
<https://hbr.org/2026/03/when-using-ai-leads-to-brain-fry>

* "There's some nuance here, however. We also found when AI is used to replace routine or repetitive tasks, burnout scores—but not mental fatigue scores—are lower.

How Many AI Tools Is Too Many?

Productivity

Survey responses to the prompt "My overall productivity at work has increased because of AI tools" on a scale from 1 (strongly disagree) to 5 (strongly agree)



Source: Boston Consulting Group survey of 1,488 full-time U.S. workers, January 2026



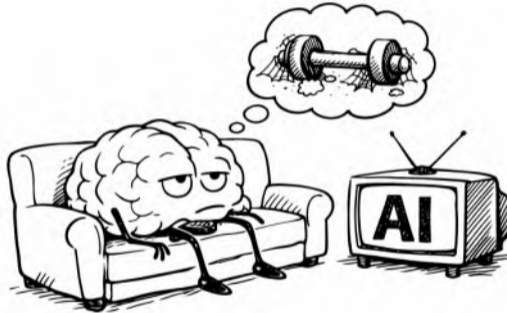
<https://hbr.org/2026/03/when-using-ai-leads-to-brain-fry>

AI does not reduce work It intensifies it!

Impact on work: Task expansion, work everywhere/anytime, less team work
Required skills: Increased multi-tasking

<https://hbr.org/2026/02/ai-doesnt-reduce-work-it-intensifies-it>

Deskilling: the thinking atrophy



<https://siddhantkhare.com/writing/ai-fatigue-is-real>

Strategies to avoid deskilling

- Time-boxing AI sessions
 - Limit to e.g., 30 minutes
 - ... limit prompts
- Separating AI time from thinking time
 - Morning for thinking
 - Afternoon for AI prompting
- Accepting 70% from AI
 - Don't expect perfect AI output

AI has an increasing impact on work
Productivity increase may have costs

>> Critical thinking as key criteria <<

Thank You!

- Kowald, D., Scher, S., Pammer-Schindler, V., Müllner, P., Waxnegger, K., Demelius, L, ... & Kopeinik, S. (2024). *Establishing and evaluating trustworthy AI: overview and research challenges*. *Frontiers in Big Data*, 7, 1467222.
- Kattinig, M., Angerschmid, A., Reichel, T., & Kern, R. (2024). *Assessing trustworthy AI: Technical and legal perspectives of fairness in AI*. *Computer Law & Security Review*, 55, 106053.

