

Kunstig intelligens og høyre utdanning

Barbara Wasson

Professor & Director, Centre for the Science of Learning & Technology Co-Director, Al Centre for the Empowerment of Human Learning



Bakgrunnserfaring

- Masters & PhD i KI Canada, 1990
- Director, Centre for the Science of Learning & Technology (SLATE)
- Co-director, AI Centre for the Empowerment of Human Learning (AI LEARN)
 (Nasjonalt senter for KI og læring)
- Europarådets ekspertgruppe for kunstig intelligens og utdanning
- Europarådets ekspertgruppe for politikk for høyere utdanning
- KDs ekspertgruppe om digital læringsanalyse NOU 2023:19
- KDs ekspertgruppe for kunstig intelligens i høyere utdanning NOU 2026 (midtveis rapport nå før jul)

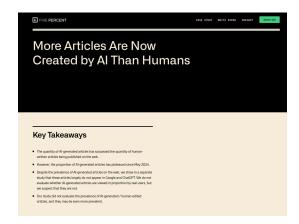
Hvor står vi nå?

Generativ KI

- Raskest voksende teknologi i verden (800 Mio brukere, Okt 2025)
- Er knyttet til sterke kommersielle og geopolitiske interesser
- Forskyver og sentraliserer maktstrukturer på nettet

Internett

- Vippepunkt i november 2024: mer KI-genererte artikler enn menneske-genererte artikler på nett
- Sterk voksende mengder av syntetisk innhold («Al slop»)





Kilde: https://graphite.io/five-percent/more-articles-are-now-created-by-ai-than-humans
[Accessed 23. Oktober 2025]

(lånt fra Anja Salzmnn)

AI slop

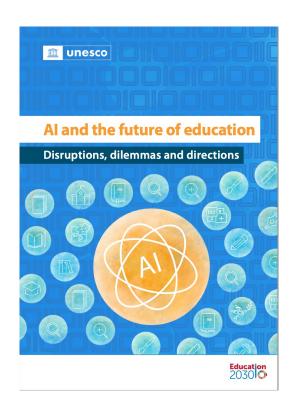
Article Talk

From Wikipedia, the free encyclopedia

Al slop is digital content made with generative artificial intelligence, specifically when perceived to show a lack of effort, quality or deeper meaning, and an overwhelming volume of production.^{[1][4][5][6]} Coined in the 2020s, the term has a pejorative connotation similar to spam.^[4]

Wikipedia, 9.nov 2025





Kilde: UNESCO (2025), AI and the future of education. Disruption, dilemmas and directions, retrieved from https://unesdoc.unesco.org/ark:/48223/pf000395236

"Education is increasingly becoming a battleground for commercial frontier AI models that promise speed, efficiency and scale while also threatening the slowness where deep learning, reflection and human connection flourish."

> Stefania Giannini Assistant Director General for Education UNESCO 2025, p.6

KI OG UTDANNING DATA & AI LITERACY



KUNSTIG INTELLIGENS

UNESCO's approach to AI focuses on the imitation of human intelligence: "machines capable of <u>imitating</u> certain functionalities of human intelligence, including such features as perception, learning, reasoning, problem-solving, language interaction, and even producing creative work"

(UNESCO, 2019)

Al refers to machine-based systems that can, given a set of human-defined objectives, make predictions, recommendations, or decisions that influence real or virtual environments. Al systems interact with us and act on our environment, either directly or indirectly. Often, they appear to operate autonomously, and can adapt their behaviour by learning about the context.

(UNICEF, 2021)





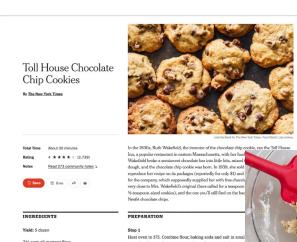
Bakt for litebakt?
For mye smør?
For lite mel?
For lav temperatur i ovnen?

09:57

Oppdatere regler (øke temperaturen)

Legg til ny regel (hvis norsk mel, tilsett 125 ml mel ekstra)

Oppdater kunnskapsbasen vår



2¼ cups all-purpose flo

1 teaspoon baking s

1 cup butter (2 sticks), softer

na cup granulated sug

1 teaspoon vanilla e

2 large eggs

2 cups/12 ounces semisweet chocolate cl

1 cup chopped nuts (optional)

Heat oven to 375. Combine flour, baking soda and salt in small granulated sugar, brown sugar and vanilla extract in large mi Add eggs, one at a time, beating well after each addition. Grav mixture. Stir in chocolate chips and nuts, if using. Drop by rou ungreased baking sheets.

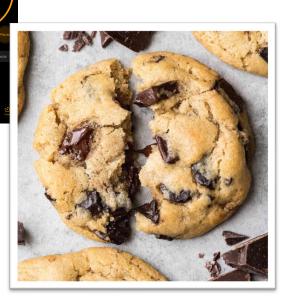
Step

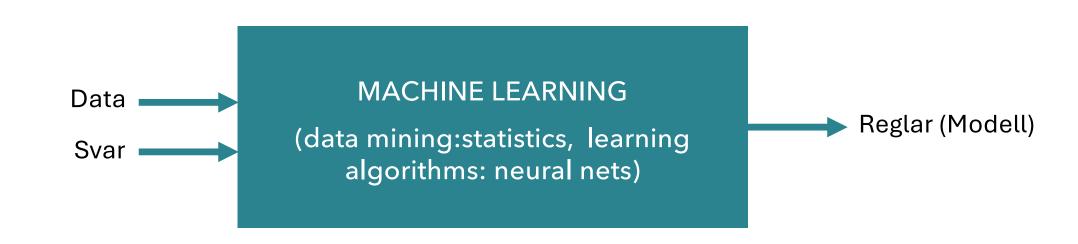
Bake for 9 to 11 minutes or until golden brown. Cool on baki

Algoritme med oppdatert reglar



09:57





Maskinlæring er en spesialisering innen kunstig intelligens hvor man bruker statistiske metoder for å la datamaskiner finne mønstre i store datamengder. Vi sier at maskinen «lærer» i stedet for å bli programmert.

Store norske leksikon

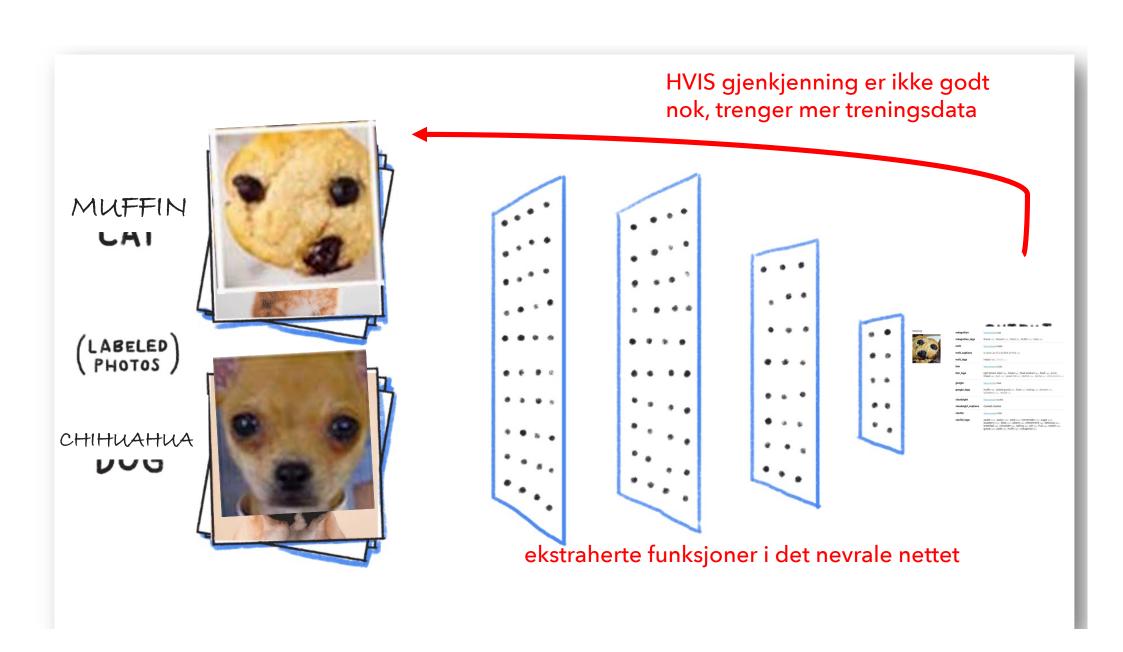
NB: Data brukes for å bygge algoritmer

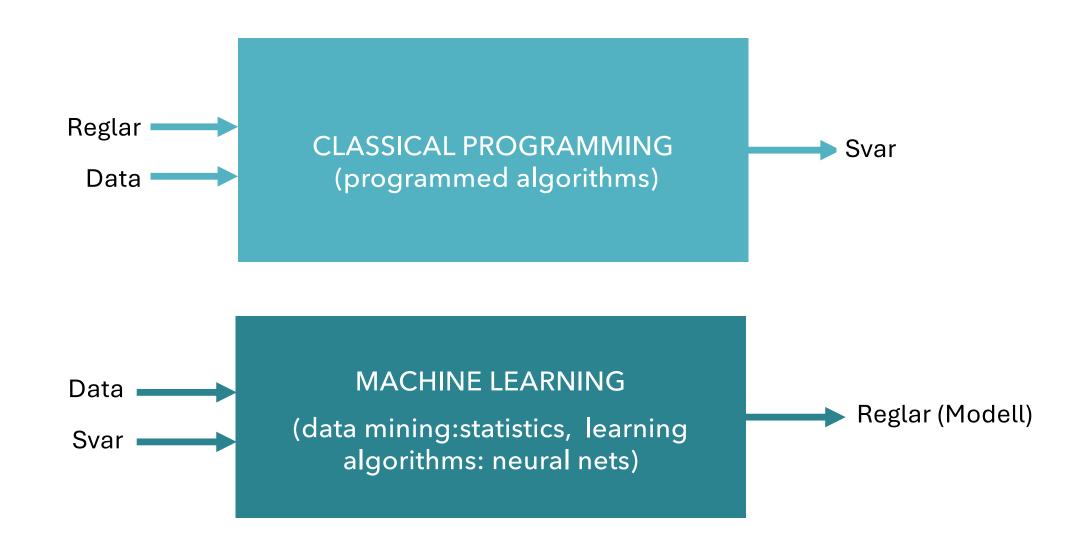
MASKINLÆRING: MASKINSYN



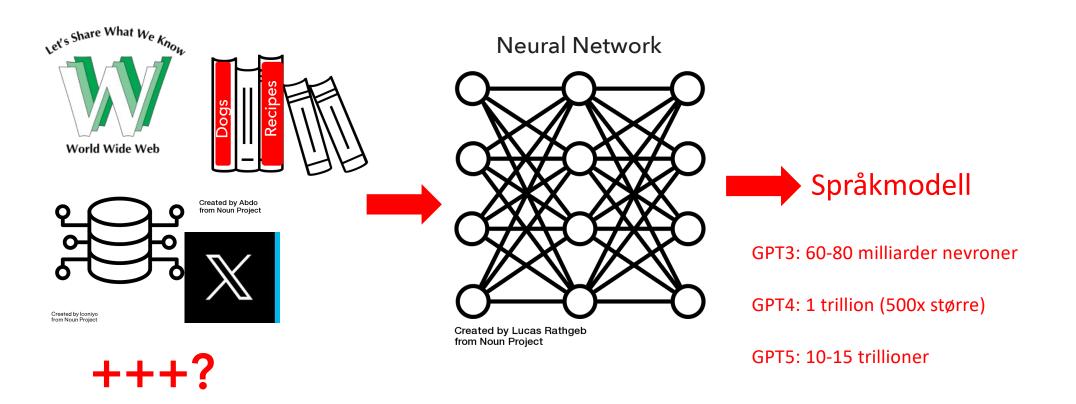
MUFFINS OR CHIHUAHUA?

https://www.freecodecamp.org/news/chihuahua-or-muffin-my-search-for-the-best-computer-vision-api-cbda4d6b425d/





GENERATIVE LANGUAGE MODELS LaMDA, PaLM, GPT, etc.



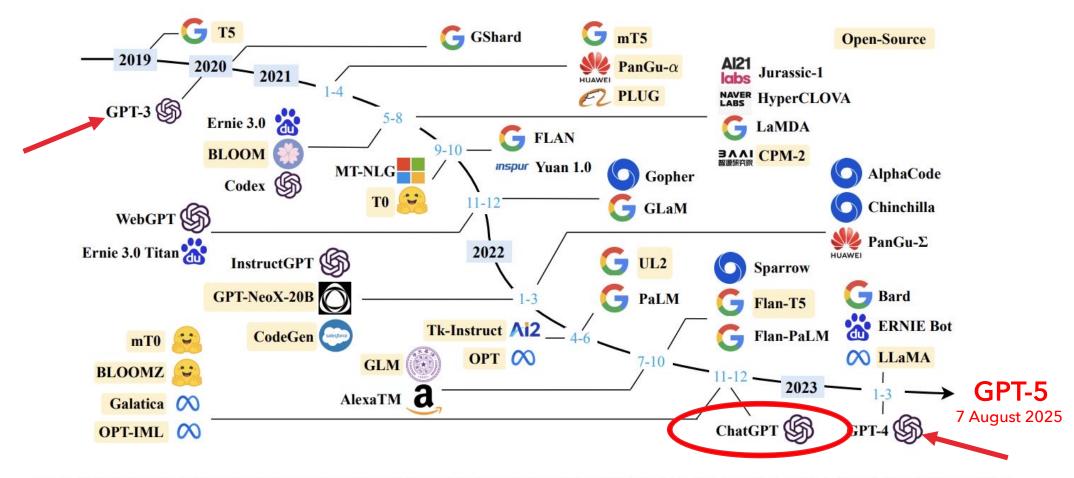
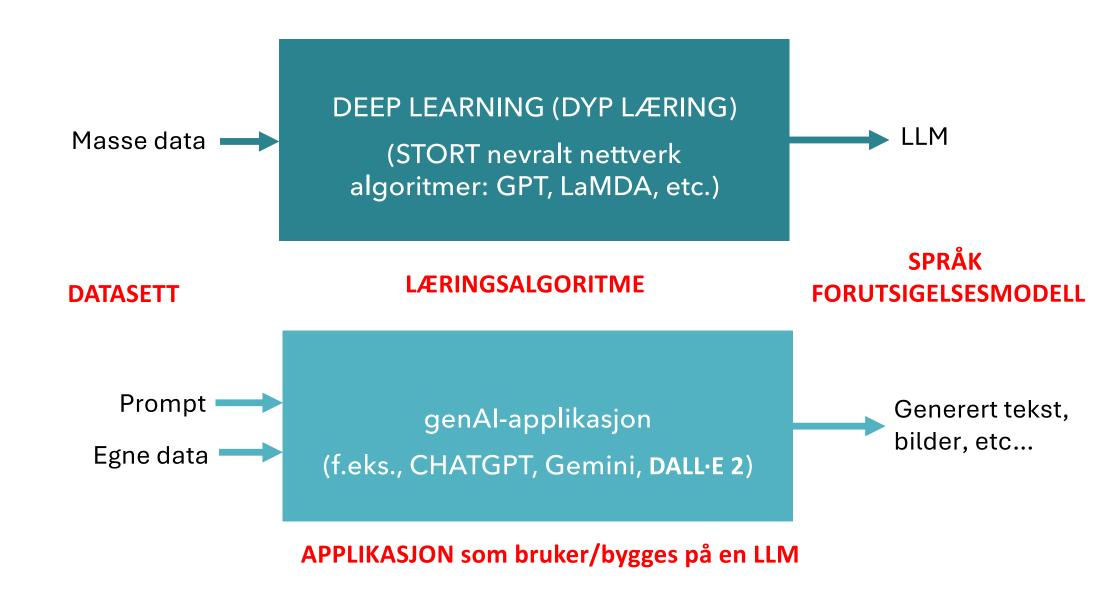


Fig. 1. A timeline of existing large language models (having a size larger than 10B) in recent years. We mark the open-source LLMs in yellow color.

https://www.nextbigfuture.com/tag/large-language-models/page/3



ChatGPT 3.5 V



You

How can you tell the difference between a chocolate chip muffin and a Chihuahua?

Well, one might argue that the smell could give it away. A chocolate chip muffin would likely smell sweet and chocolaty, while a Chihuahua, well, probably doesn't smell like chocolate at all! Also, if it's moving around and barking, it's more likely to be the Chihuahua. But hey, mistakes happen, so it's always good to double-check!



it can only generate text that is its training data

How can you tell the difference between a chocolate chip muffin and a Chihuahua?

Significant Excellent question! While both may be small and cute, telling them apart is usually straightforward once you observe a few key differences:

1. Texture and appearance:

- o A chocolate chip muffin is typically soft, crumbly, and has a baked, rounded top. It may have visible chocolate chips and a golden-brown exterior.
- o A Chihuahua has fur, four legs, a tail, ears that often perk up, and expressive eyes. It moves, breathes, and reacts to its surroundings.

2. Behavior:

- A muffin does nothing unless eaten or touched.
- A Chihuahua may bark, wag its tail, sniff, or seek attention.

3. Context:

- Muffins are found in bakeries, kitchens, or packaged on shelves.
- o Chihuahuas are usually with owners, on leashes, or in homes.

4. If in doubt:

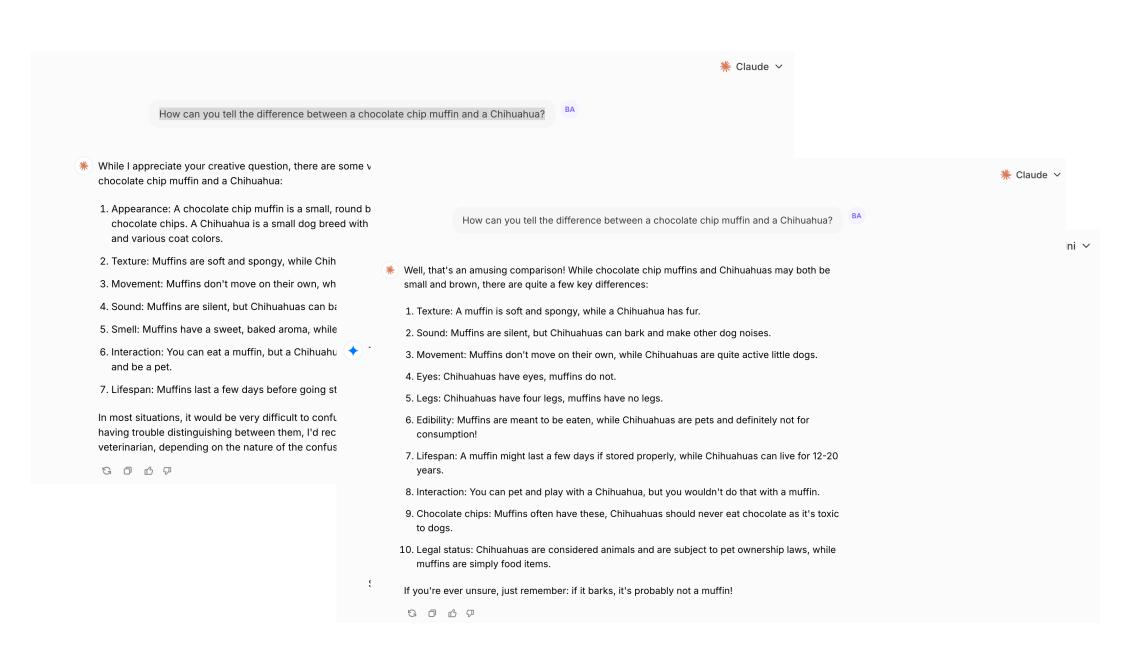
- o Gently poke it (with caution!). A muffin will crumble; a Chihuahua will likely yelp or move.
- o Offer food: A muffin won't care, but a Chihuahua might get excited.

So, unless someone baked a very realistic—and concerning—pastry, you should be able to tell them apart easily! e









CHALLENGES & CONTROVERSIES (UNESO + others)

BRUK AV INNHOLD UTEN SAMTYKKE BLIND FOR VERDIER & DEN VIRKELIGE VERDEN

BIAS

DATA SIKKERHET STØRRE SKADE FOR MILJØET OG ØKOSYSTEMENE AI-GENERERT INNHOLD SOM FORURENSER INTERNETT

UFORKLARLIGHET

VURDERING / EKSAMEN

GENERERING AV «DEEP FAKES»

BESKYTTELSE AV
SPRÅKLIG &
KULTURELL
MANGFOLDIGHET

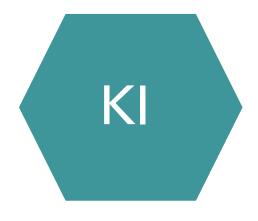
DATAMANGEL FORVERRER DIGITAL FATTIGDOM

FOR LANGSOM REGULERING



Oppdatert 30. januar, 2024

KI & UTDANNING



Mange teknologier

Tale til tekst
Tekst til tale
Maskinsyn
Ansiktsgjenkjenning
Søking
Plannlegging
NLP
osv.

Generativ KI

(tekst, bilder, animasjoner, ...)



Administrative systems

Admission Systems
Plagiarism detection
Summative assessment
Dropout prediction
Course recommendation
Support for well-being
Program recommendation
Al detection

For learners

Intelligent tutoring systems (adaptive...)
Dialogue-based tutoring
Exploratory Learning Environments
Essay generation
Essay critiquing
Learning Companions
Collaborative Learning support
Language learning apps
College recommendations
Writing applications for college
Mental health support

For teachers/instructors

Automatic feedback generation
Forum monitoring
Essay scoring
Quiz generation
Lesson planning
Rubric generation
Smart curation of learning materials





AGENTER

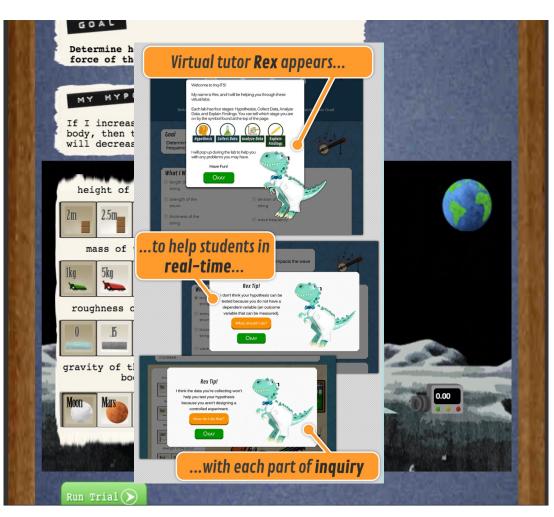
En chatbot kan bare chatte med deg, men en «agent» kan planlegge og utføre en rekke oppgaver, som å bygge nettstedet ditt, foreta en reservasjon, lage en presentasjon eller utforske oppgavelistene dine, e-post og arbeidsflyt, og deretter finne informasjon på datamaskinen din.

INQ-ITS: PERSONALISED ONLINE LABS

(e.g., Gobert et al, 2013 ...; Dickler, R., Li, H., & Gobert, J. (2019)

komplekse,
patenterte algoritmer
basert på
reglar,
maskinlæring

NLP



ingits.com

Vitenskapelig metode

Simuleringslab (interagerer)

modellering i sanntid

automatisk vurdering av elevenes «investigations»

fremdrifts «monitoring»

personlig tilpasset støtte

"Stealth assessment"

INQ-ITS: PERSONALISED ONLINE LABS

(e.g., Gobert et al, 2013 ...; Dickler, R., Li, H., & Gobert, J. (2019)

Anbefalt av

US Ministry of Education

50 delstater & 12 land



inqits.com

Inq-ITS
vurderingsalgoritmer
er validert med
tusenvis av studenter
og matcher
menneskelig
vurdering med omtrent
95% nøyaktighet

Duolingo bruker KI til å tilpasse læringsopplevelsen basert på dine prestasjoner og fremgang



GenAl bruk



Handa, K, Bent, D. et al (2025, April 8) Anthropic Education Report: How University Students Use Claude. https://www.anthropic.com/news/anthropic-education-report-how-university-students-use-claude

Entusiastiske barn **roper engelske ord** til en storskjerm der et romskip kan erobre en annen planet **hvis uttalelsen er "nesten riktig"!** En **virtuell engelsklærer** veileder dem fra skjermen gjennom dette spennende spillet, mens **læreren i klasserommet** hjelper barn som trenger litt mer støtte.



Maskinlæring som «matcher» studenter basert på ferdigheter



FOR PARENTS

ASK QUESTION

LOG IN

JOIN FOR FREE

Your 24/7 homework helper

- ✓ Ask 350 million teachers and students any school question.
- Get expert-verified answers fast
- Pair up student and parental accounts NEW

JOIN FOR FREE

DISCOVER BRAINLY FOR PARENTS





ARTIFICIAL INTELLIGENCE

Custom AI Tutor Bots Are Transforming Learning at HBS

Here's How Students Are Using Them

by Mimi Sax

June 24, 2025



Andriy Onufriyenko / Getty Images

Explore more

INTELLIGENCE
COURSE DESIGN

STUDENT ENGAGEMENT

Share this article



ast fall, Harvard Business School (HBS) introduced a new kind of teacher, one without office hours, tenure aspirations, or even a pulse. That teacher? A generative AI-powered tutor bot designed to put an "interactive textbook" in the hands of every student taking first-year accounting.

Throughout the academic year, 930 students in HBS's introductory accounting class, Financial Reporting and Control (FRC), used the chatbot for their coursework. As part of my graduate research at Harvard Business School, I closely tracked their usage. Through a partnership with HBS's Digital Transformation team, we analyzed more than 20,000 student chatbot prompts and conducted focus groups with the first-year students.

https://hbsp.harvard.edu/inspiring-minds/ai-tutor-bots-harvard-business-school

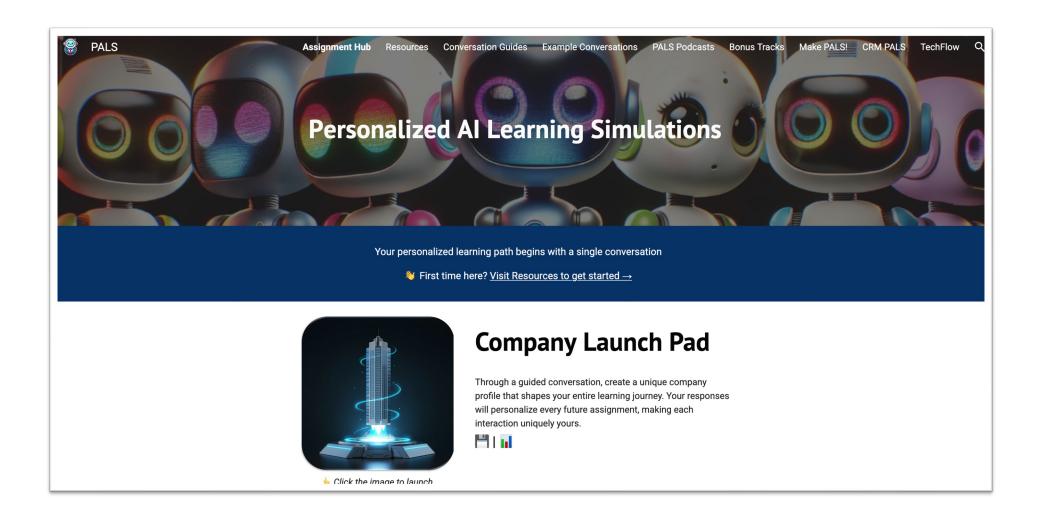
930 students 20 000 prompts

Better prepared and better midterms

- 45% understanding fundamental concepts and jargon
- 42% practice questions
- 6% formulas and metrics calculations
- Only 12% became power users

"Many of us have taught these cases many times, and it's clear we now go through the technical accounting topics quicker," he said. "This gives us more room to discuss interesting judgment questions that come after you understand basic accounting. This is where the case method really shines. This semester has been one of the most successful semesters of FRC in the course's history."

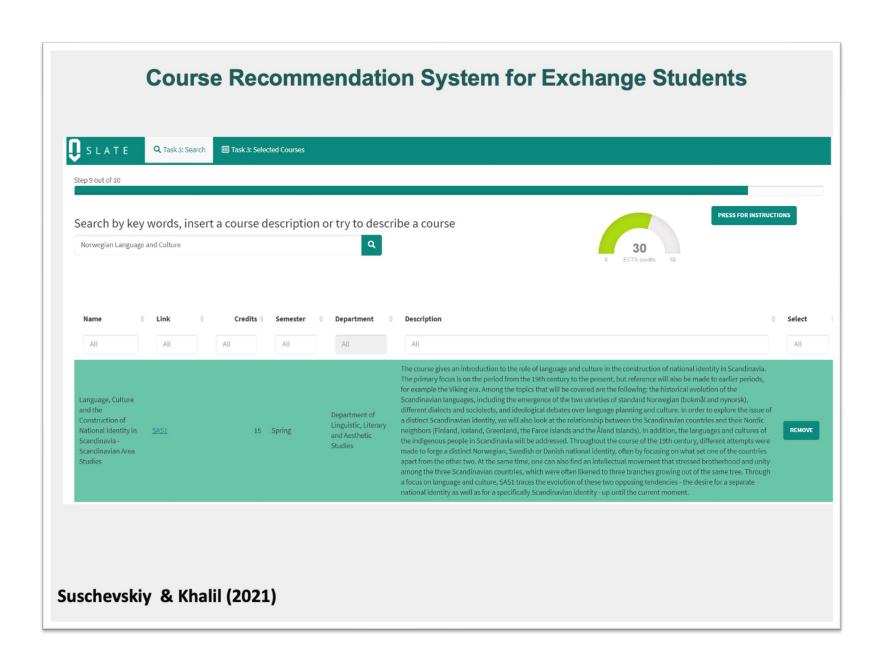
Charles Wang, Tandon Family Professor of Business Administration



https://sites.google.com/view/psbpals/assignment-hub

Mohammad Khalil & Gleb Belokrys





INEZ – a talking dialogic chatbot

(Human-Human-Al system)

INEZ asks questions to an innovation group to stimulate creativity - the enabler for innovation

Dr Ingunn Ness, SLATE & AI LEARN





Al Assistance for Faculty Tasks

(See https://teachingnaked.com/prompts/ for all of the prompts)

- What's unclear about these instructions?
- Provide five ideas for how to introduce X
- Design a classroom exercise where students will need to...
- Write a convincing proposal to get this new course approved by department X (or approved to count for this gen ed requirement). The format is Y and should include 5 learning outcomes that align with Z...
- Why might I want to keep using this old code/software?
- Improve this assignment so it is harder to cheat using AI
- Can you put this into simpler terms for beginning students?
- Analyze typical assignments for college-level data science courses and adapt or create 5 new assignments that need to be done with AI assistance. Provide instructions. If the assignment can be done by AI alone then start over.
- Analyze these successful grant applications and identify common elements, ideas, methods, structures, or language that might have contributed to their success.
 Recommend how I might adapt my current proposal to be more successful.
- Pretend you are a faculty member on a search committee for a new dean. Read the
 uploaded position description, my cover letter and CV. How might the committee react
 to my materials? List missing elements and suggest ways for me to improve my
 application.
- Who are the other major figures in this field who might be potential reviewers of this article? What work of theirs should I be sure to cite?

Building an Al-Ready Workforce: A Look at Student ChatGPT Adoption in the US (2025).

Art & Science HS Student Poll May 2024

55% worry that other students using AI will negatively impact their chance of getting into their desired college

53% assume they will be taught in college how to use Al tools effectively and ethically

OpenAI. (Survey of 1229 18-24 year-olds plus usage data from Jan 2025

What do you use Al for in your studies? (Select all that apply)

34% Summarizing or paraphrasing homework

32% Organizing my schedule

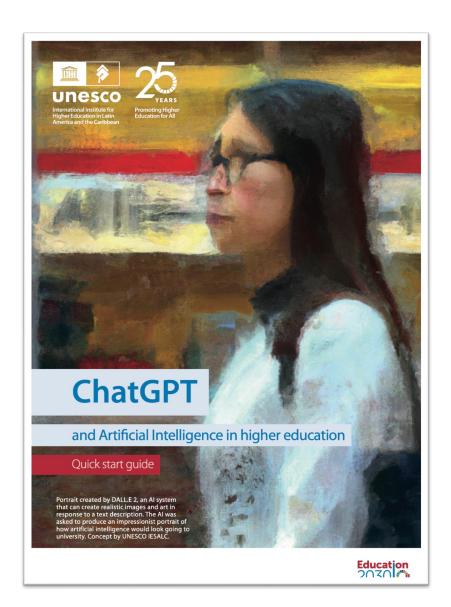
31% Answering homework questions

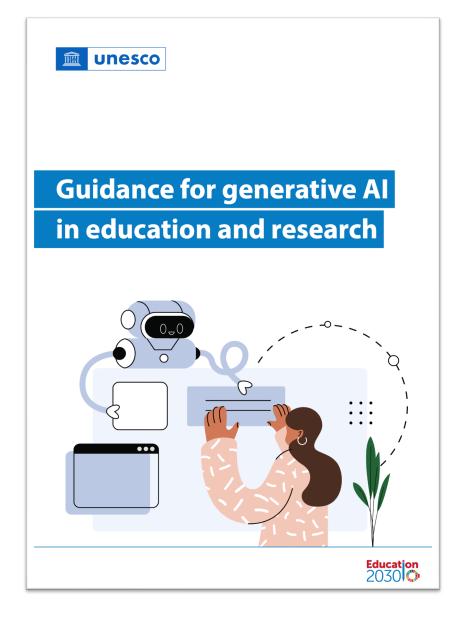
31% Resumes, cover letters or applications

30% Assisting with writing assignments

29% Taking notes or summarizing lectures

26% Generating practice materials for studying









I fjør spådde Sal Khan (Khan Academy) at Al-veiledningsroboter snart ville revolusjonere utdanningssektoren. Ledere i store teknologiselskaper har lignende visjoner.

"There's a rush to proclaim
the authority and the
usefulness of these kinds of
chatbot interfaces and the
underlying language models
that power them,"

"But the evidence that A.I. chatbots can deliver those effects does not yet exist."

Professor Ben Williamson University of Edinburgh Ben Williamson talks about "precision learning" that will allow for the collection and production of 'intimate data' about students' psychological, neuroscience and genetic characteristics. The challenges of a growing convergence of, for example, digital technologies and neuroscience research are also receiving increasing attention, with a particular focus on the implications for education and learning (bio-digitalism).









AI search engines cite incorrect news sources at an alarming 60% rate, study says

CJR study shows AI search services misinform users and ignore publisher exclusion requests.

BENJ EDWARDS – 13 MAR 2025 22:16 | 140





The study highlighted a common trend among these AI models: rather than declining to respond when they lacked reliable information, the models frequently provided plausiblesounding but incorrect or speculative answers—known technically as confabulations

https://arstechnica.com/ai/2025/03/ai-search-engines-give-incorrect-answers-at-analarming-60-rate-study-says/



Higher education (HE) faces a complex landscape of digital technology services, shaping educators' labour and working conditions in new ways. Two particular issues are **ownership of intellectual property (IP)** and **academic freedom** when using digital education services such as edtech platforms. Edtech platforms complicate questions of academic ownership of content and teaching materials and can impact educators' academic freedom in teaching.

The headline finding of this study is that the increasing digitalisation and 'platformisation' of HE is resulting in a complex, messy combination of technical, legal and financial factors relating to academic IP and academic freedom, which are often complicated further by different governance and copyright regimes across national borders and individual institutions.

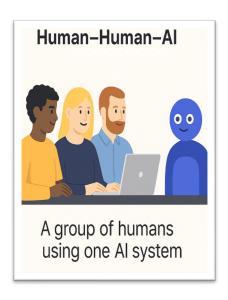


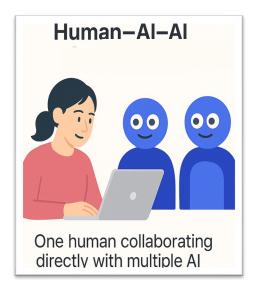


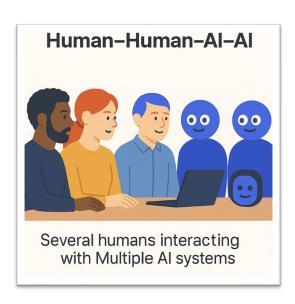
AI CENTRE FOR THE EMPOWERMENT OF HUMAN LEARNING NASJONALT SENTER FOR KI OG LÆRING

HUMAN-AI SYSTEMS (co-learn, co-work, co-create, co-lead...)





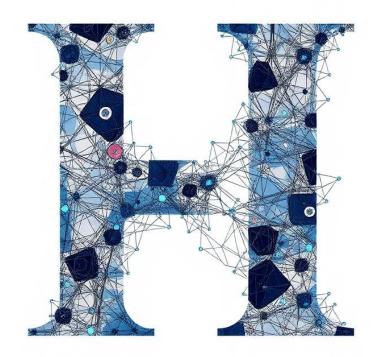




Images co-created by Ingunn Ness & ChatGPT

Hybrid intelligence seeks to create sociotechnical ensembles in which human and machine capabilities are meaningfully integrated and mutually enhancing.

As such, a **hybrid intelligence lens** enables critical investigation into the ethical, technological, and practical complexities that arise when AI intertwines with human activity.

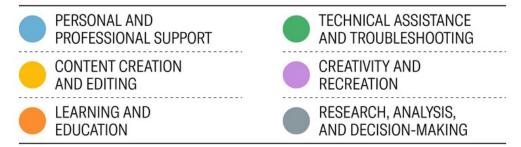


KARRIEREVEILEDNING & SOSIALPEDAGOGISK RÅDGIVNING

Top 10 Gen Al Use Cases

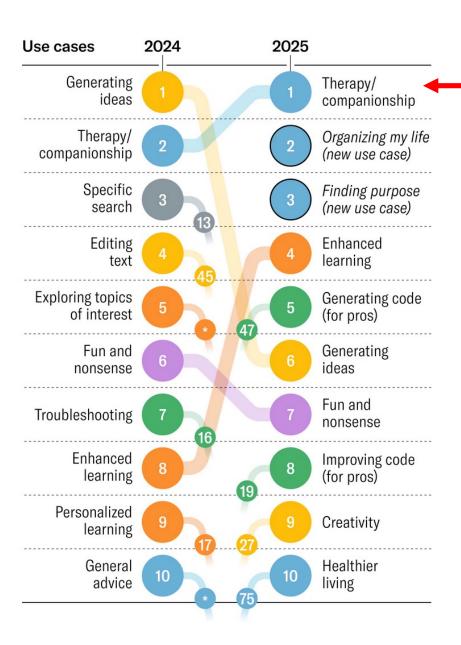
The top 10 gen AI use cases in 2025 indicate a shift from technical to emotional applications, and in particular, growth in areas such as therapy, personal productivity, and personal development.

Themes





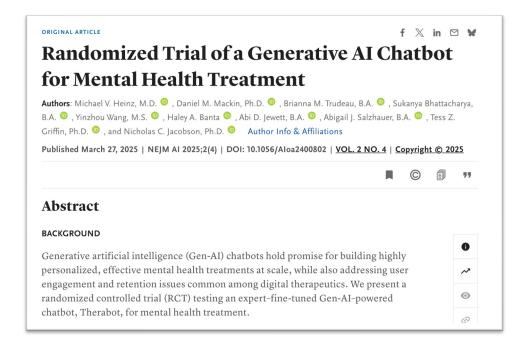
https://hbr.org/data-visuals/2025/04/top-10-gen-al-use-cases



THERABOT — psykisk helse

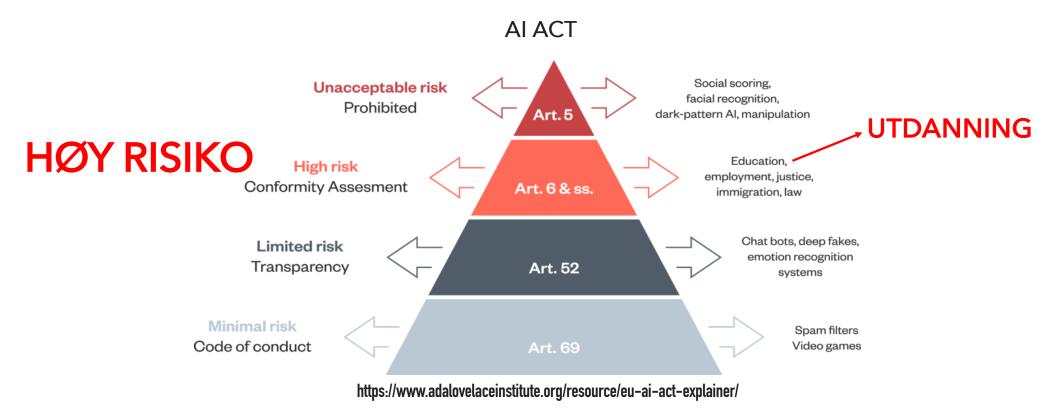
"... significantly greater reductions in symptoms (Dartmouth RCT study, N=210) when treating clinical-level mental health symptoms

- major depressive disorder
- generalized anxiety disorder
- clinically high risk for feeding and eating disorders



"Therabot was well utilized (average use >6 hours), and participants rated the therapeutic alliance as comparable to that of human therapists."

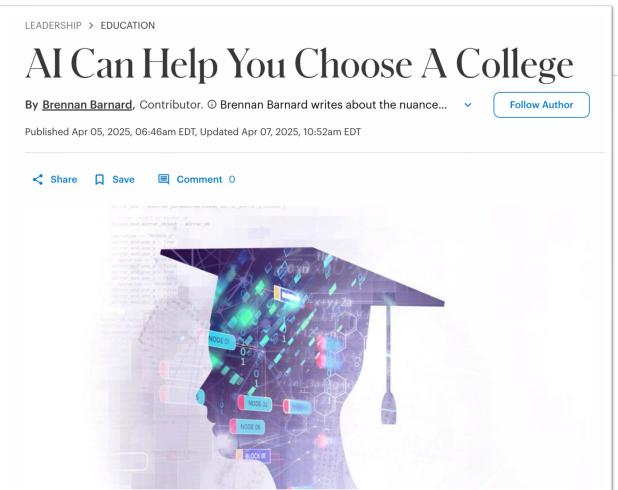
Forordning om kunstig intelligens (KI-forordningen)



minimere risikoen for feilaktige eller partiske Al-assisterte beslutninger beskytte barns sårbarhet Noen **Al-systemer bruk i utdanning** er kategorisert av EUs Al-lov, art. 6 og følgende, som **applikasjoner med høy risiko**:

- (a) Al-systemer som brukes til å avgjøre tilgang til utdanningsinstitusjoner (på alle nivåer)
- (b) Al-systemer for vurdering og/eller bruk i styring av læringsprosesser og utdanningsløp for studenter
- (c) Al-systemer som brukes til å kartlegge en persons utdanningsnivå
- (d) Al-systemer som brukes til å overvåke og oppdage uønsket atferd hos barn eller elever/i klasserommet eller i vurderingssituasjoner

Du kan ikke gi juridisk ansvar til en Al.



https://www.forbes.com/sites/brennanbarnard/2025/04/05/ai-can-help-vou-choose-a-college/

NEWSLETTER
On Tech

Applying to College? Here's How A.I. Tools Might Hurt, or Help.

ChatGPT might change the application essay forever.





Kendrick Brinson for The New York Times

By Natasha Singer

Sept. 1, 2023

"Transform my difficult decision between [specific college/university options] into a clear decision matrix. Reveal hidden risk, long-term consequences, and psychological factors influencing my decision that I am completely blind to."



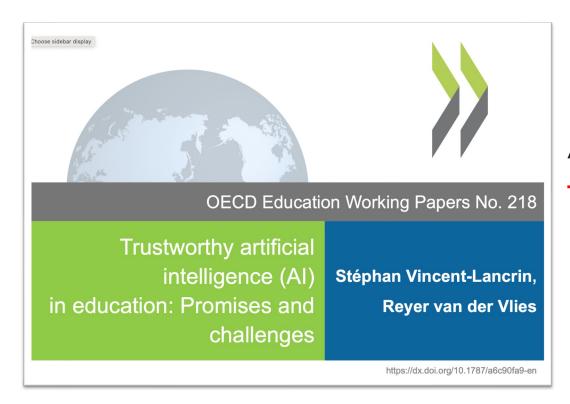
They identified five recurring themes:

- comparing financial aid packages
- weighing program strengths for specific majors
- brainstorming questions for campus tours
- gauging real-world career outcomes
- clarifying factors like location or student life.

In most cases, they simply found AI to be a quicker way of aggregating info that might otherwise require multiple Google searches.

Når den allsidige GenKI brukes i alle prosesser:

Karriereveiledning & Sosialpedagogisk rådgivning?



Reaching the full potential of Al requires that stakeholders trust not only the technology, but also its use by humans.

Vincent-Lancrin & van der Vlies, 2020

OVELSE:

Du er en 18 år gammel norsk elev som søker opptak til universitetet. Du er interessert i å studere xxx.

Bruk GenAl til å finne 5 programmer du kan søker opptak til ved et norsk universitet.

DATA & AI LITERACY



Studier Forskning Innovasjon Bibliotek For studenter For ansatte Om UiB





Hjem > Studier > Nettstudier og videreutdanning > Teknologi og digitalisering

Digital kompetanse for arbeidslivet (DIGI)

Trenger du mer digital kompetanse? UiB tilbyr en rekke små, nettbaserte emner om data og digitalisering, kunstig intelligens, personvern og GDPR, IKTsikkerhet, med mer. DIGI-emnene er åpne for alle interesserte.



- → DIGI610 Fantastiske data
- ∨ DIGI612 IKT-sikkerhet (undervises på engelsk)
- ∨ DIGI614 Grunnkunnskap om kunstig intelligens

DIGI610 Fantastiske data Oppstart: Mandag 9. februar 2026 DIGI610C Fantastiske data for lærere (høst 2026)

Fakta om DIGI-emner

- Rekke med flere små mikroemner
- 2,5 studiepoeng per emne
- Nettbasert undervisning over 6-9 uker per emne
- 500-1000 studieplasser per emne
- Ingen studieavgifter, kun semesteravgift kr 650,- per semester
- Nye emner starter hvert semester
- Vi åpner for påmelding til vårens emner mandag 17. november

Du kan også holde deg orientert om ledige plasser og kommende DIGI-emner, ved å melde deg på vårt nyhetsbrev:

Kompetanse Norge

SLATE & Digital Norway



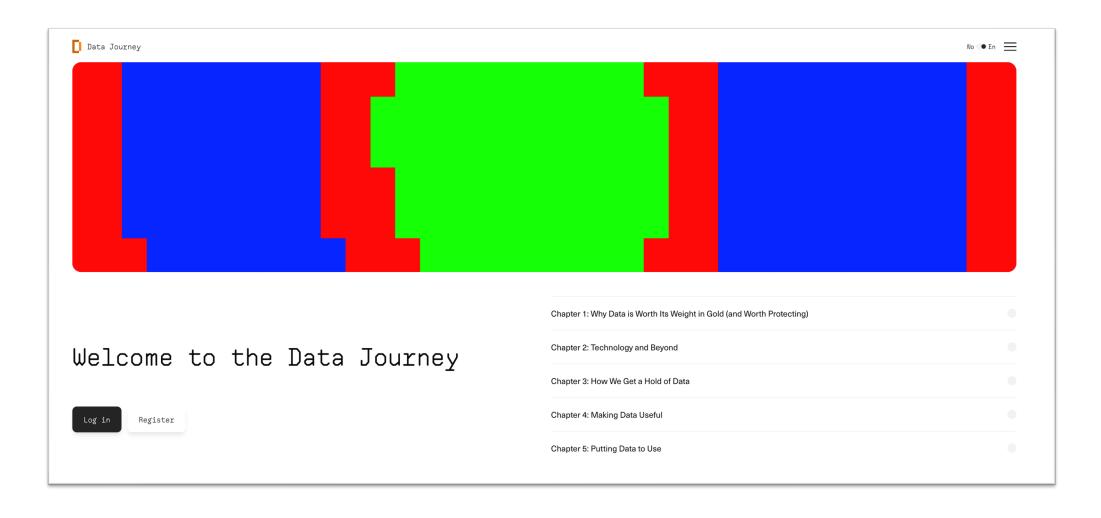
These have contributed content to DATAREISEN:

Professor Barbara Wasson, **SLA**TE, UiB Researcher Jeanette Samuelsen, SLATE, UiB Researcher Fredrik Breien, SLATE, UiB Postdoc Anja Salzmann, SLATE

Associate Professor Malgorzata Cyndeka, Juridisk Fakultetet UiB og SLATE (personvern og GDPR) Associate Professor Leonora Onarheim Bergsjø, Høgskolen i Østfold (Digital etikk) Text writer Mikael Lunde + others, NewsLab AS, Oslo

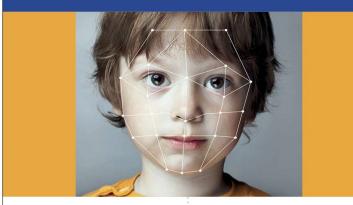


datareisen.no



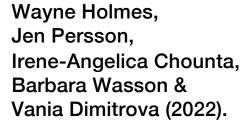
ARTIFICIAL INTELLIGENCE AND EDUCATION

A critical view through the lens of human rights, democracy and the rule of law



Provisional edition

We need the application and teaching of AI in education to prioritise and facilitate human rights, democracy and the rule of law.







TAKK!

?

