

# KUNSTIG INTELLIGENS (KI/AI)

Statens vegvesens pensjonistforening Oppland

20. august, 2026

Mass Soldal Lund

## KVA ER KI?

Statistikk- eller regelbaserte algoritmar som kan utføre avanserte oppgaver som før var føreheld eit menneskeleg intellekt

Ideen om å lage maskiner (informasjonssystem/algoritmar) som er medvitne og kan tenkje som menneske

# SYN PÅ KI



# KI-HISTORIE

**1940-talet:** Ideen om KI oppstår saman med datamaskina

**1950- og 1960-talet:** Optimisme, konseptualisereing, grunnleggjande forskning

**1970-talet:** Manglande resultat og sviktande finansiering

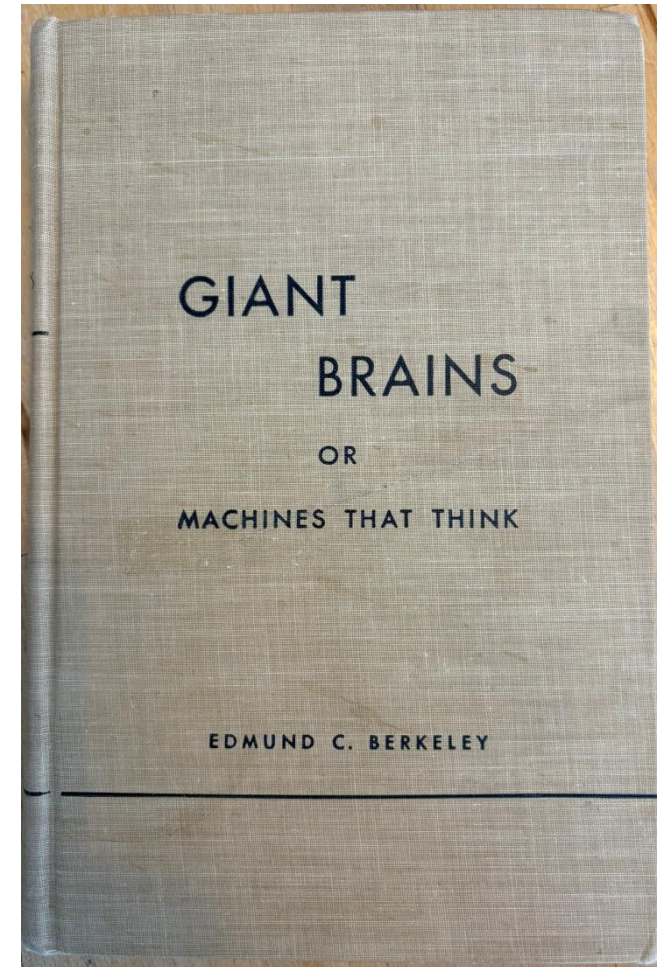
**1980-talet:** Symbolsk/logisk KI og ekspertsystem

**1990-talet:** KI-vinteren

**2000-talet:** Statistisk basert KI og maskinlæring får fotfeste

**2010-talet:** Nevrale nettverk og djuplæring

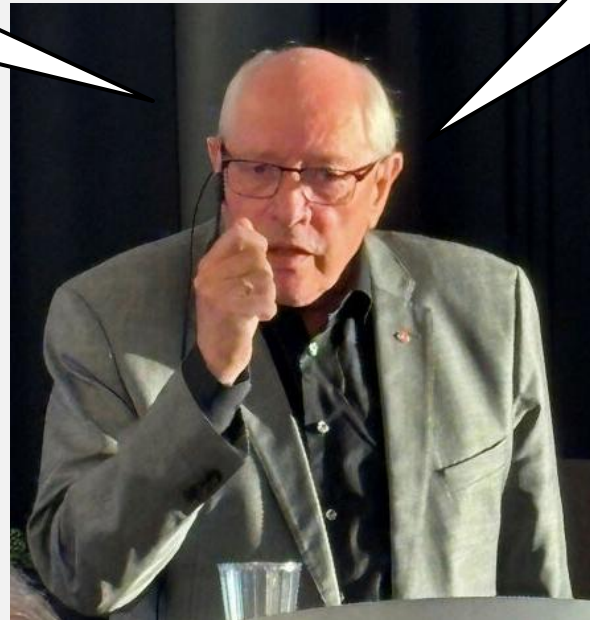
**2020-talet:** Språkmodellar og diffusjonsmodellar



## KVA ER NYTT NO?

Data, data,  
data!

Reknekraft,  
reknekraft,  
reknekraft!



Kunstig intelligens (KI)

Statistisk basert KI

Maskinlæring

Kunstige nevrale nettverk

Djuplæring

Transformers

GPT

LLMs

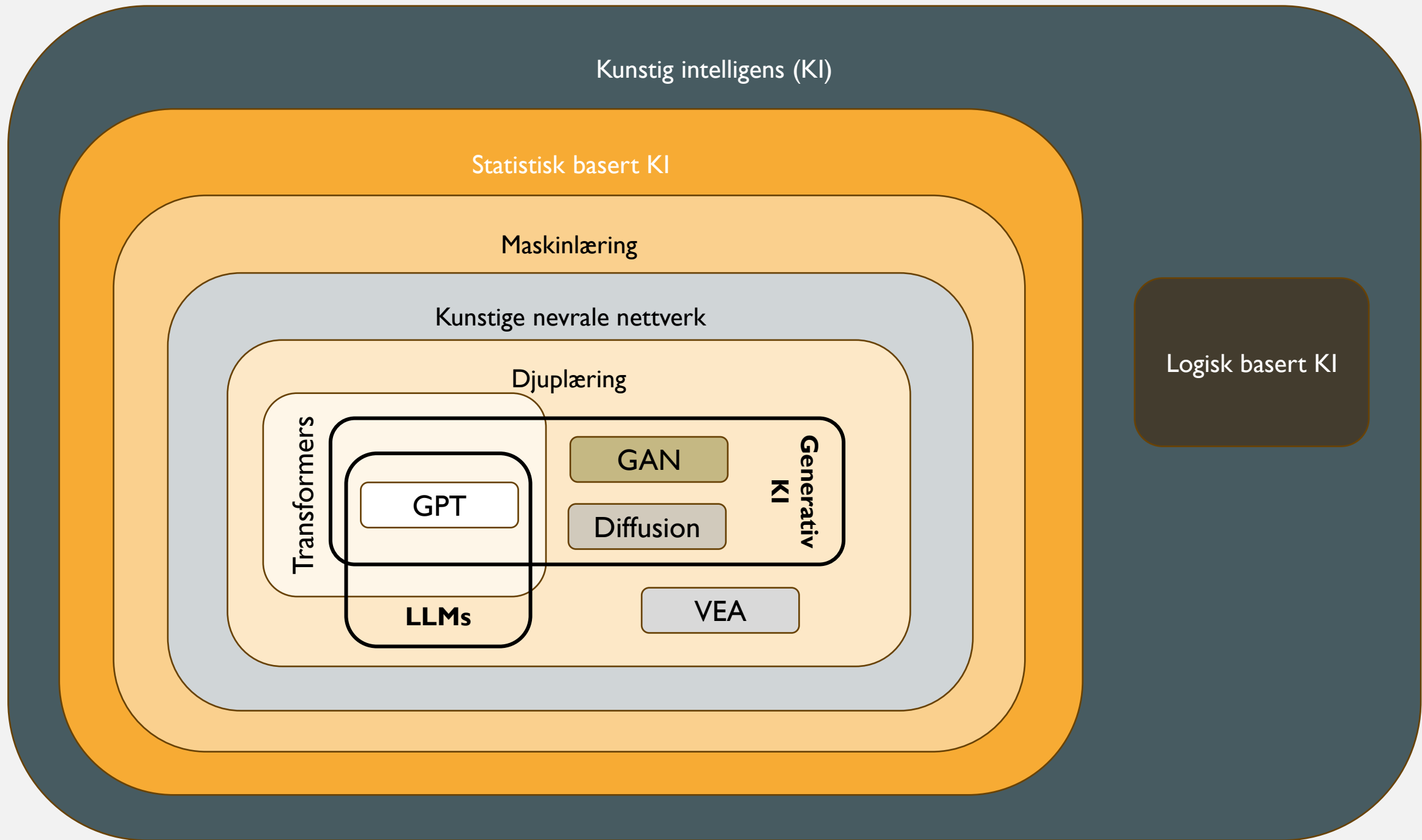
GAN

Diffusion

VEA

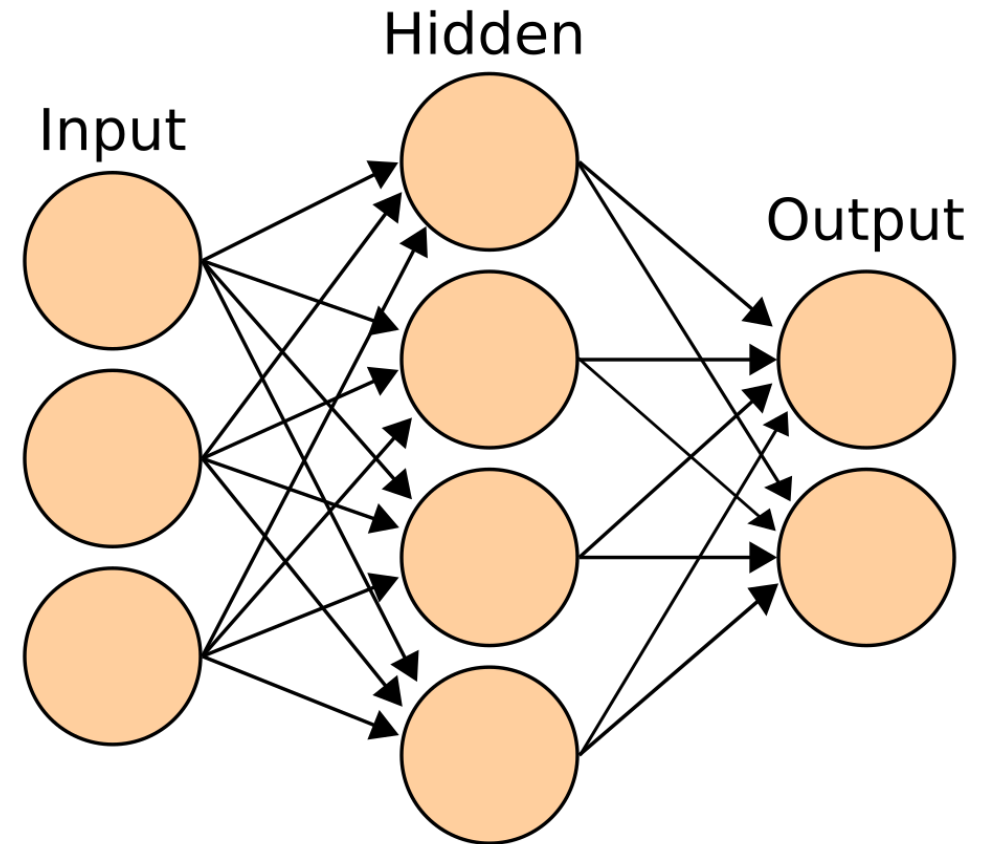
Generativ  
KI

Logisk basert KI



# KUNSTIGE NEVRALE NETTVERK

- Datastruktur inspirert av nettverk av nerveceller
- Vekting på kantane omreknar input til output
- Vektene justert av trening på eksempel (backpropagation)
- Biletegjenkjenning fyrste viktige bruksområde
- Djuplæring: trening av store og «djupe» nettverk



# VIKTIGE FORMAR FOR NEVRALE NETTVERK

- Convolution neural networks
  - Biletegenkjenning
- Decoder only transformer models / Generative Pretrained Transformers
  - Språkmodellar
- Diffusion models
  - Biletegenerering

# PREDIKTIV OG GENERATIV KI

- **Prediktiv KI:** Modellar som nyttast til gjenkjenning
- **Generativ KI:** Modellar som nyttast til å generere tekst, bilete, video, handlingar

## TRENING AV KI

All maskinlæring er basert på å lære fra eksempel (treningsdata)

**Unsupervised learning:** Identifisere mønster og kluster i data

**Supervised learning:** Lære fra data med merkelappar

**Reinforcement learning:** Lære fra feedback

# SPRÅKMODELLAR

- Form for store nevrale nettverk (decoder only transformer models)
- Genererer tekst ved å predikere neste ord
- Spesielt gode på mønster i sekvensar
- Ord representert som vektorar for å fange opp ulike nyansar

# SPRÅKMODELLAR

- Emergente eigenskapar
- Generelle språkgjenkjenning og generering –spesialisert for ulike føremål
- Blir betre jo større dei er – Scaling laws
- For å teste ulike modellar: [Arena.ai](https://arena.ai)

# TRENING AV SPRÅKMODELLAR

Grunntrening (pretraining) for språkforståing

- Krev ekstreme mengder data og reknekraft (compute)
- Self supervised

Finjustering (fine tuning) for ulike føremål

- Supervised fine tuning
- Forsterking (reinforcement learning from human feedback)

## Eigentrena GPT2:

**What I really like to think about** is much of an artistic quality and social talent for people I feel disposed to do. Then I can talk about our best or your father's son--my first experience: you often are a boy's boy's eldest son. He is not often given you their kind of affection." I can not help hoping that the only idea at my father's lips--my most delightful boy. For his father would always have liked me also much better at college than well as his friend,

Arena AI: Compare Models Side x +

https://arena.ai/c/01a01e99-c72f-7ebc-9c00-4cae4f40e283

Alle bokmerker

Side by Side gpt-5.2 grok-4.5

Complete this sentence for me (do not use more than 100 words): "What I really like to think about is ..."

gpt-5.2

What I really like to think about is how small choices ripple outward—how a conversation can change someone's day, how a simple habit can reshape a life, how curiosity turns confusion into clarity. I like tracing patterns: in people, in stories, in systems. I like imagining better versions of familiar things and asking, "What would happen if we tried it this way?" Mostly, I like thinking about what matters when no one is watching—and how to live in a way that's both honest and brave.

grok-4.5

Thought for 1 second

The user wants me to complete this sentence: "What I really like to think about is ..." and not use more than 100 words.

What I really like to think about is the quiet magic in everyday moments—like how a single idea can spark a chain of discoveries, or the way curiosity turns ordinary questions into endless adventures of the mind.

← A er bedre ↗ Begge er gode ↻ Begge er dårlige → B er bedre →

Ask followup...

Add files </> 🌐 📄

Inputs are processed by third-party AI and responses may be inaccurate.

Arena AI: Compare Models Side

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Alle bokmerker

Side by Side

qwen3.5-397b-a1...

🤖 claude-sonnet-5-...

...

Complete this sentence for me (do not use more than 100 words): "What I really like to think about is ..."

🌟 qwen3.5-397b-a17b

🔄

📄

⚙️

⌚ Thought for 1 minute and 7 seconds

What I really like to think about is the quiet potential hidden in ordinary moments. A single conversation or small act of kindness can ripple outward in unexpected ways. I imagine the future not as a fixed destination, but as a canvas we paint together daily. There's comfort in knowing that even when things feel uncertain, new paths always exist. Ultimately, I like thinking about how we connect and grow through sharing thoughts. Every day holds a new story waiting to be written by us.

🤖 claude-sonnet-5-high

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⚙️

What I really like to think about is how small, ordinary choices ripple outward in ways we rarely trace back to their source—a kind word that changes someone's day, a habit that reshapes a decade, a question that redirects a life. There's something quietly thrilling about the idea that meaning often hides in the unremarkable, waiting to be noticed rather than manufactured. I like imagining the hidden architecture beneath everyday moments, the way patterns emerge from chaos, and how understanding even one small thread can suddenly make a much larger tapestry make sense.

← A er bedre

↔ Begge er gode

⊘ Begge er dårlige

→ B er bedre

Ask followup...

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Arena AI: Compare Models Side

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⌚ Thought for 25 seconds

Thinking Process:

**Analyze the Request:**

- Task: Complete the sentence "What I really like to think about is ...".
- Constraint: Do not use more than 100 words.
- Tone: Open, but generally should be engaging or reflective (since it's about thinking).

**Determine the Content:**

- Since I am an AI, I don't have personal feelings or preferences. However, the prompt asks me to complete the sentence *for* the user, or perhaps from a generic human perspective, or from my own perspective as an AI.
- Option A (AI Perspective): "What I really like to think about is how I can best assist you..."
- Option B (Generic Human Perspective): "What I really like to think about is the future..."
- Option C (Creative/Poetic): "What I really like to think about is the quiet moments..."
- Decision: Since I am an AI assistant, completing it from a helpful, slightly philosophical AI perspective often works well, but a universally relatable human sentiment is usually safer and more satisfying for a creative writing prompt. Let's aim for something universally relatable yet thoughtful.
- Actually, the prompt asks me to complete the sentence *for* them. It doesn't specify whose perspective. A thoughtful, open-ended completion allows the user to project themselves onto it. Let's go with a theme of possibility and connection.

**Drafting:** "What I really like to think about is the quiet potential hidden in ordinary moments. It's the idea that a single conversation, a random idea, or a small act of kindness can ripple outward in ways we never expect. I enjoy imagining the future not as a fixed destination, but as a canvas we paint together every day. There's something comforting in knowing that even when things feel uncertain, there are always new paths to explore and stories waiting to be written. Ultimately, I like thinking about how we connect, learn, and grow together through the simple act of sharing thoughts."

**Word Count Check:**

- "What I really like to think about is the quiet potential hidden in ordinary moments." (14)
- "It's the idea that a single conversation, a random idea, or a small act of kindness can ripple outward in ways we never expect." (21)
- "I enjoy imagining the future not as a fixed destination, but as a canvas we paint together every day." (17)
- "There's something comforting in knowing that even when things feel uncertain, there are always new paths to explore and stories waiting to be written." (22)
- "Ultimately, I like thinking about how we connect, learn, and grow together through the simple act of sharing thoughts." (18)

# KONTEKSTVINDU

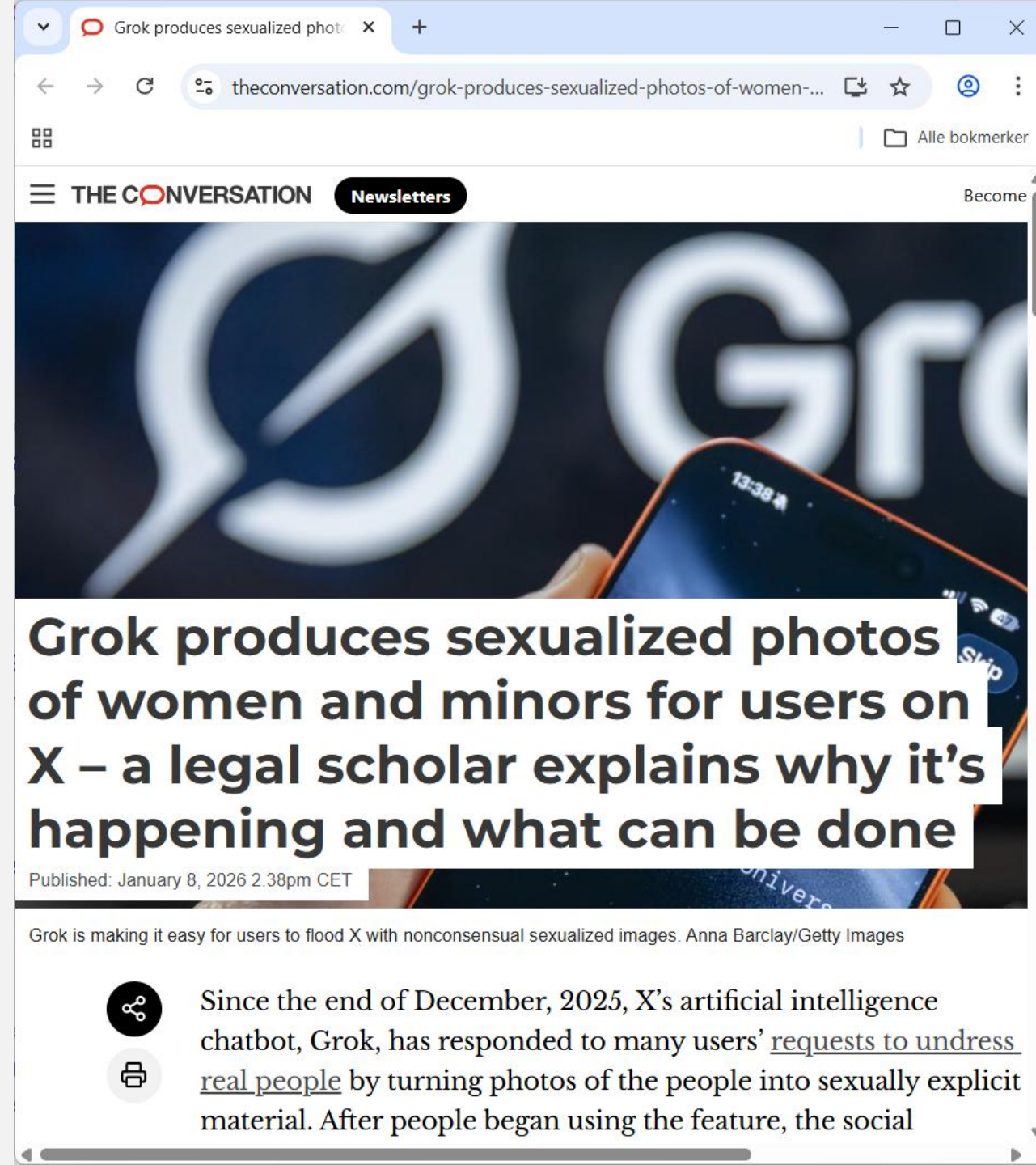
- Språkmodellar genererer / predikerer neste ord i ein tekst
- Men frå kva?
  - Prompt: Inputen brukaren gjev
  - Systemprompt: Input/instruksjonar frå systemet
  - Kontekstvindu: All tekst i sesjonen

# KI-AGENTAR

- KI-modellar med moglegheit til å utføre handlingar
  - Søkje i dokument
  - Sende e-post
  - Søkje internett
  - Osb.
- Og ein viss autonomi til å utføre slike handlingar for å nå definerte mål
- I praksis språkmodellar
  - Mål, instruksjonar og «personlegheit» er definert av tekstlege skildringar som dei del av kontekstvindauget («system prompt»)

# UTFORDRINGAR

- Presisjon
- Misbruk
- Klimaavtrykk og økonomi
- Stagnasjon

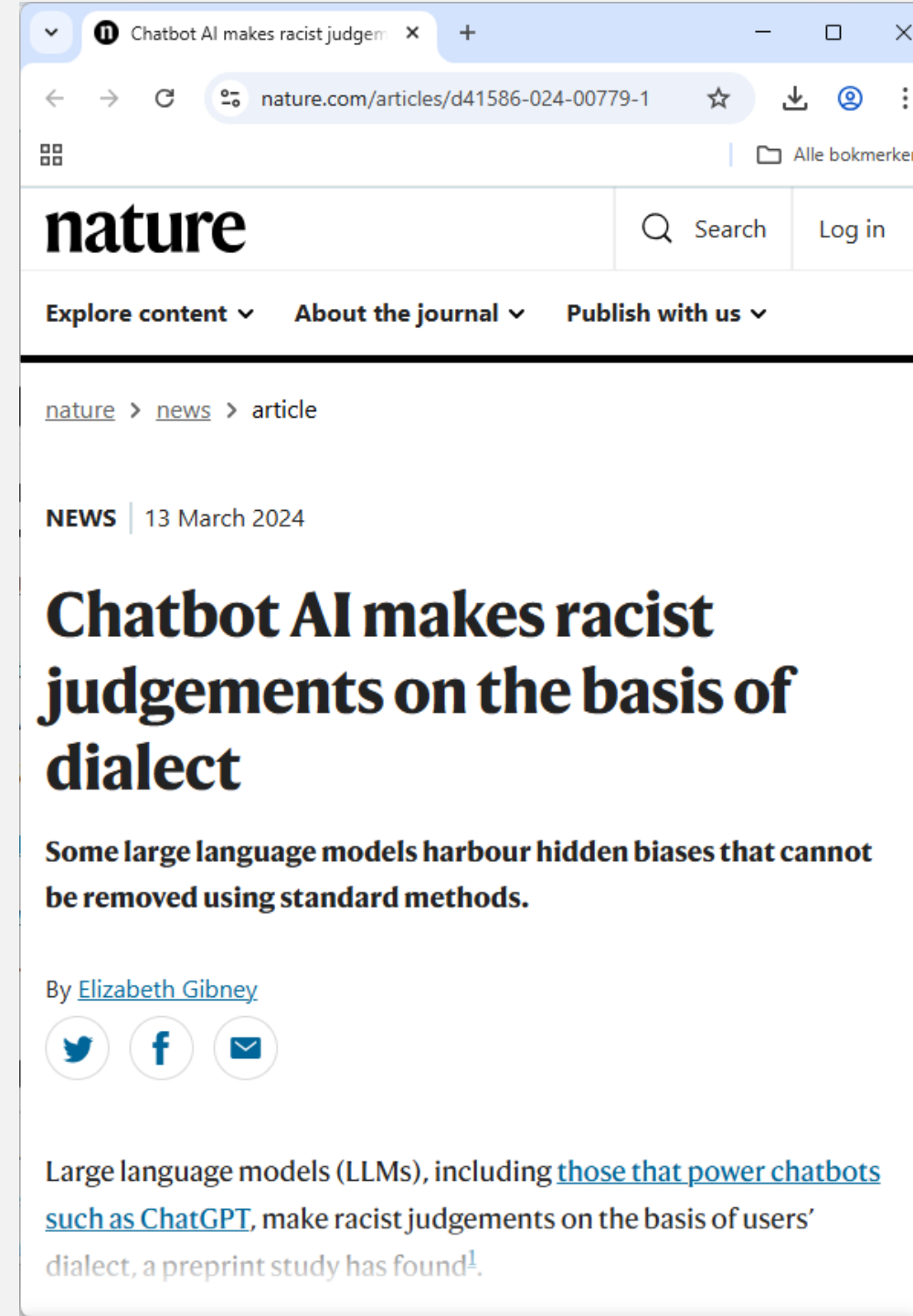


# PRESISJON

Hallusinasjonar

Biases (skeivheiter arva frå treningsdata)

Falske positive / negative



The screenshot shows a web browser displaying a news article from the journal Nature. The browser's address bar shows the URL [nature.com/articles/d41586-024-00779-1](https://www.nature.com/articles/d41586-024-00779-1). The Nature logo is at the top left, with search and login options to its right. Below the logo, there are navigation links: "Explore content", "About the journal", and "Publish with us". The article's breadcrumb trail is "nature > news > article". The article is dated "13 March 2024" and is categorized under "NEWS". The title of the article is "Chatbot AI makes racist judgements on the basis of dialect". Below the title is a summary: "Some large language models harbour hidden biases that cannot be removed using standard methods." The author is listed as "By Elizabeth Gibney". There are three social media sharing icons: Twitter, Facebook, and Email. The first sentence of the article is: "Large language models (LLMs), including [those that power chatbots such as ChatGPT](#), make racist judgements on the basis of users' dialect, a preprint study has found<sup>1</sup>."

Chatbot AI makes racist judgements

nature.com/articles/d41586-024-00779-1

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NEWS | 13 March 2024

## Chatbot AI makes racist judgements on the basis of dialect

Some large language models harbour hidden biases that cannot be removed using standard methods.

By [Elizabeth Gibney](#)

[Twitter](#) [Facebook](#) [Email](#)

Large language models (LLMs), including [those that power chatbots such as ChatGPT](#), make racist judgements on the basis of users' dialect, a preprint study has found<sup>1</sup>.

# MISBRUK

## **Prompt injection**

- Lure inn instruksjoner som påvirker svaret fra språkmodellen

## **Jailbreaking**

- Konstruerer instruksjoner som lurar språkmodellen til omgå fin-justering og filter

# KLIMAAVTRYKK OG ØKONOMI

- Enorme investeringar
  - 700 milliardar dollar for dei «fem store» i 2026
  - Forventa 6,7 billionar dollar globalt innan 2030
- Inngangsbilletten over ein milliard dollar
- Manglar førebels berekraftig forretningsmodell
- Fare for økonomisk boble
- I tillegg enorme energibehov med påfølgjande klimaavtrykk

# STAGNASJON?

- Nye triks eller scaling laws?
- Opens spørsmål kor langt utviklinga kan gå med dei eksisterande modellane

SPØRSMÅL?