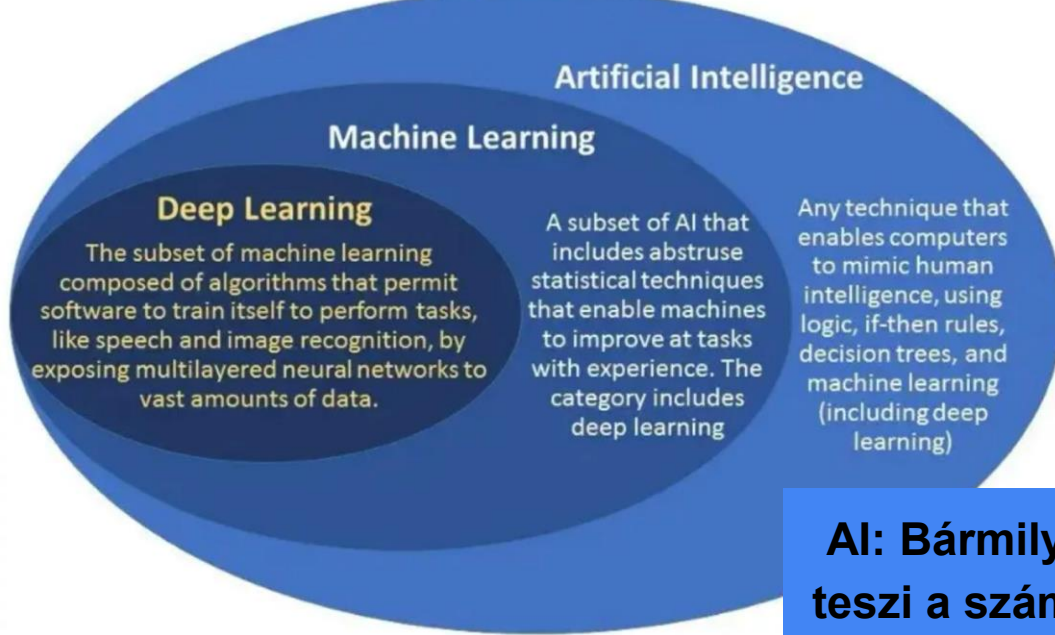


A mesterséges intelligencia alapfogalmai, lehetőségei

<https://bit.ly/ai-slides3241>

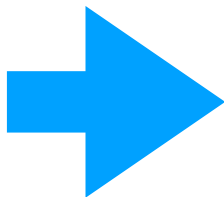


Lengyel Zsolt
2025 Február 19.



AI: Bármilyen technika, amely lehetővé teszi a számítógépek számára az emberi intelligencia utánzását...

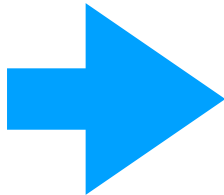
Mivel?



Modellek



Hogyan?



Tanulási Paradigmák



Gépi tanulás

Tanulási Paradigmák



1. Felügyelt tanulás
(Supervised)

2. Nem felügyelt tanulás
(Unsupervised)

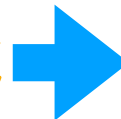
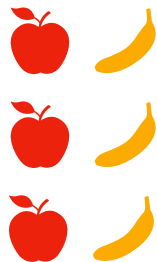
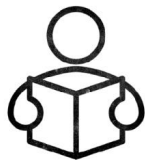
3. Megerősítéses tanulás
(Reinforcement)

4. *Tovább tanulás*
(*Transfer Learning*)

...

1. Supervised Learning
2. Unsupervised Learning
3. Semi-Supervised Learning
4. Reinforcement Learning (RL)
5. Self-Supervised Learning
6. Multi-Task Learning
7. Few-Shot, One-Shot, and Zero-Shot Learning
8. Online Learning
9. Active Learning
10. Federated Learning
11. Transfer Learning
12. Evolutionary Learning (Neuroevolution)
13. Contrastive Learning
14. Adversarial Learning
15. Meta-Learning ("Learning to Learn")
16. Curriculum Learning

1. Felügyelt (Supervised)



Modell

Bemenet:
Felcímkézett adat

Bemenet



Várt kimenet



Cat



Dog



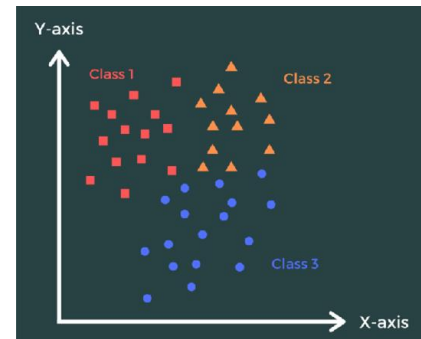
Dog



Cat



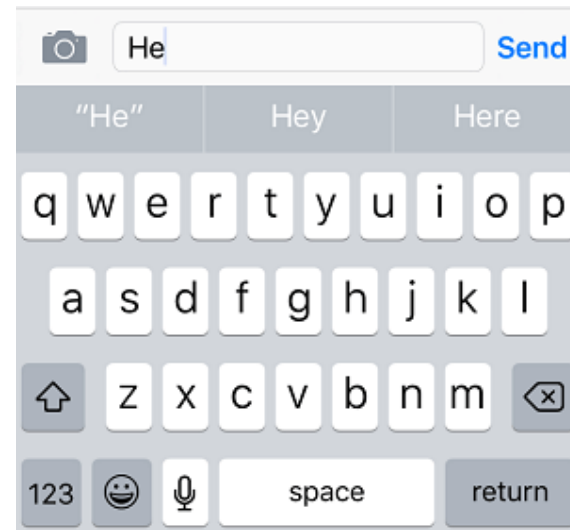
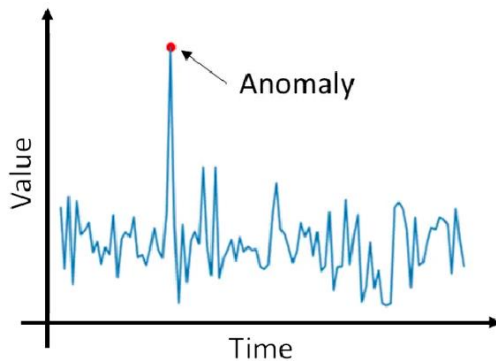
2. Nem felügyelt (Unsupervised)



Bemenet



Várt kimenet



~2000

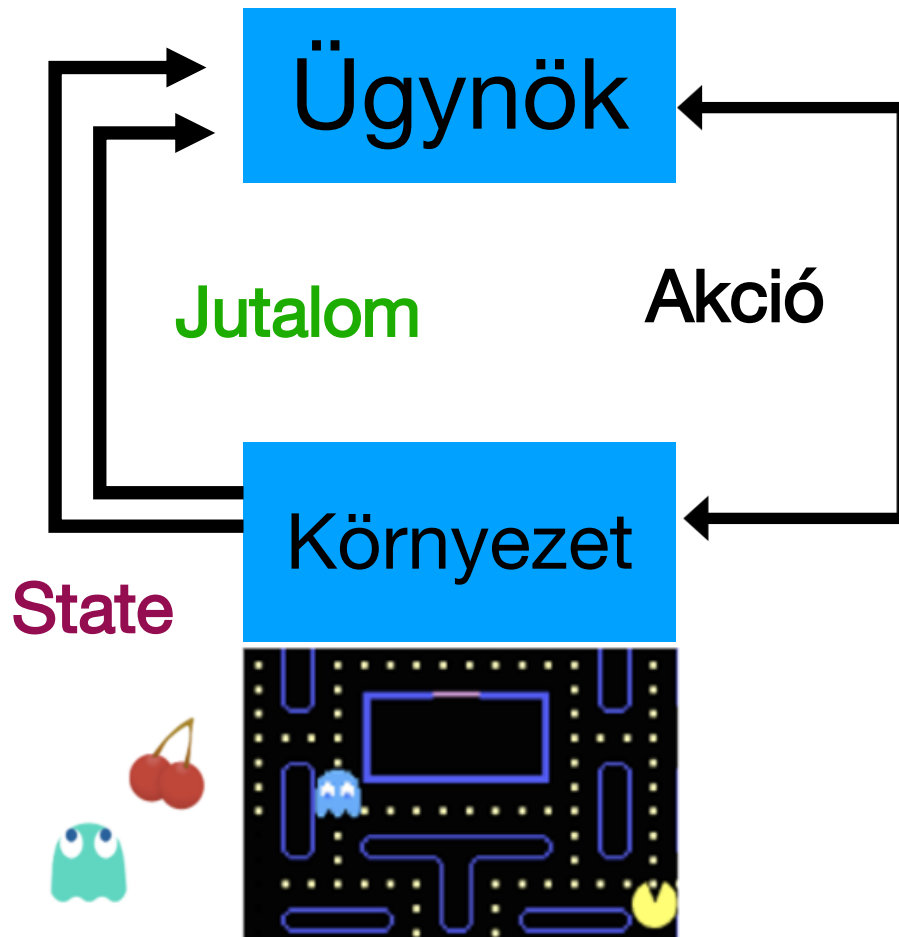
3. Megerősítéses tanulás (Reinforcement)



<https://www.youtube.com/watch?v=WXuK6gekU1Y>

~2014

AlphaGo



Machine Learning



Modells

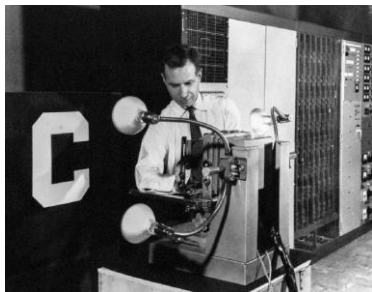
- Linear Regression
- Logistic Regression
- Decision Trees
- Random Forests
- Gradient Boosting Machines (GBMs)
- Support Vector Machines (SVMs)
- k-Nearest Neighbors (k-NN)
- **Neural Networks**
- Deep Learning (e.g., Convolutional Neural Networks, Recurrent Neural Networks, Transformers)
- Naive Bayes Classifiers
- k-Means Clustering
- Hierarchical Clustering
- Principal Component Analysis (PCA)
- Gaussian Mixture Models (GMMs)
- Hidden Markov Models (HMMs)
- DBSCAN
- t-Distributed Stochastic Neighbor Embedding (t-SNE)
- Autoencoders
- Reinforcement Learning (e.g., Q-learning, DQNs, PPO)
- Bayesian Networks
- Gaussian Processes
- ...

Perceptron Model

Artificial neural network



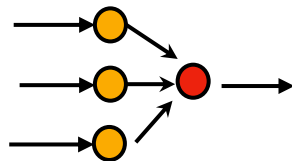
https://www.youtube.com/watch?v=cNxadbrN_al



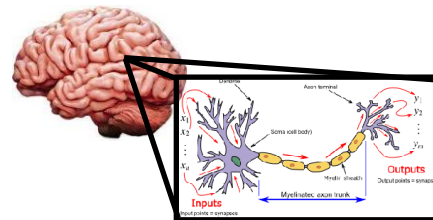
1958 - Frank Rosenblatt

20 x 20
fotóérzékelő

~400 "neuron"



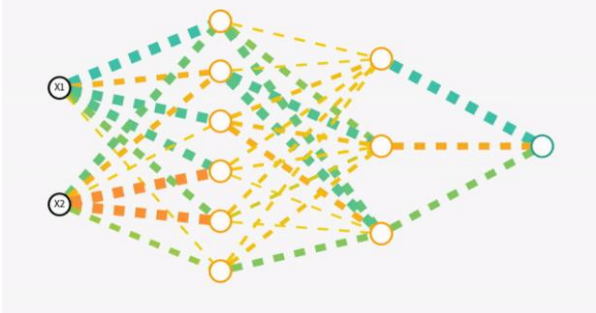
Előrecsatolt
egyrétegű hálózat



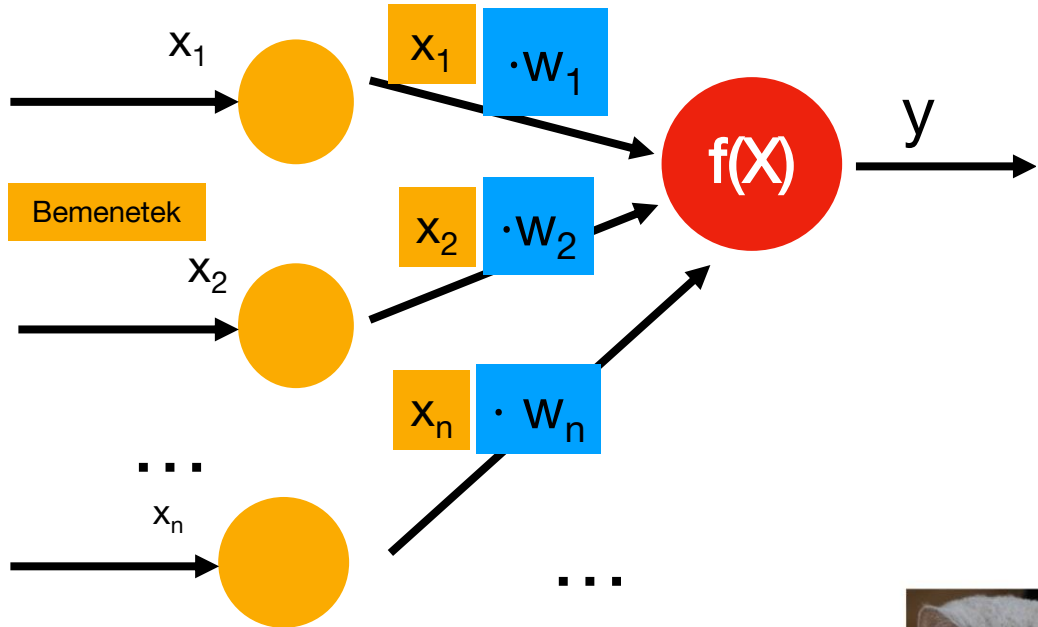
Neuron

80-100 milliárd neuron

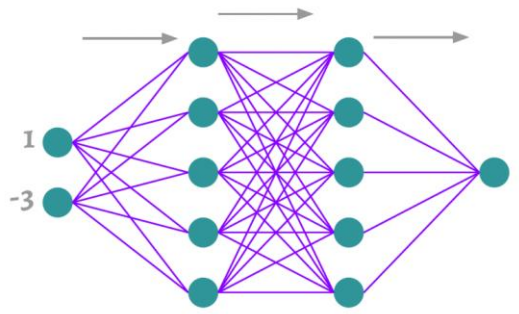
Neurális hálózat



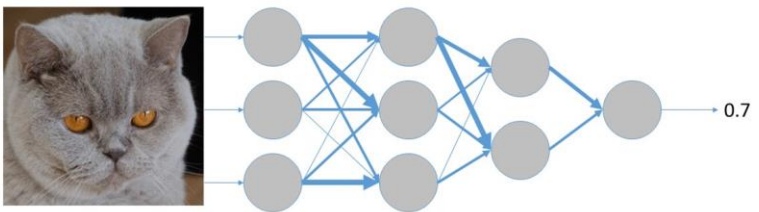
Perceptron

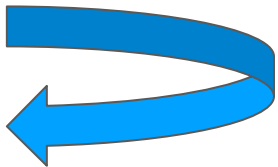


1-25 millió paraméter



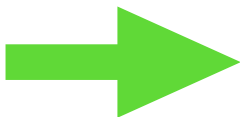
Is it a cat?





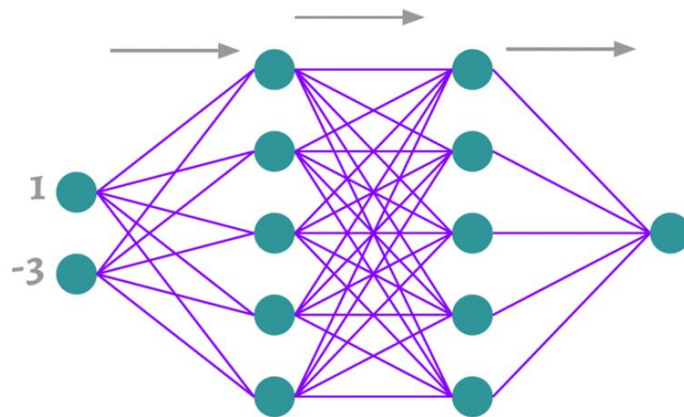
Back Propagation: Tanulás

Felügyelt (Supervised) tanulás

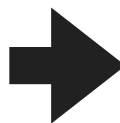
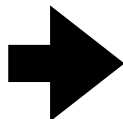


Feed Forward: Prediction
(Használat)

1. lépés "próba"

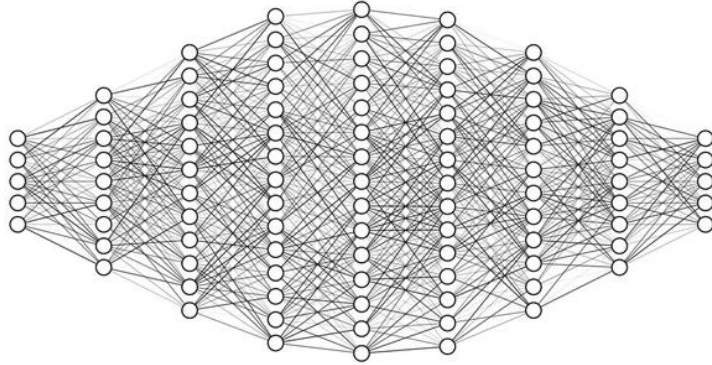


2. Lépés eredmény ellenőrzése és paraméterek módosítása, hogy az eredmény jobb legyen

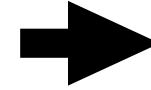


Neurális hálózat

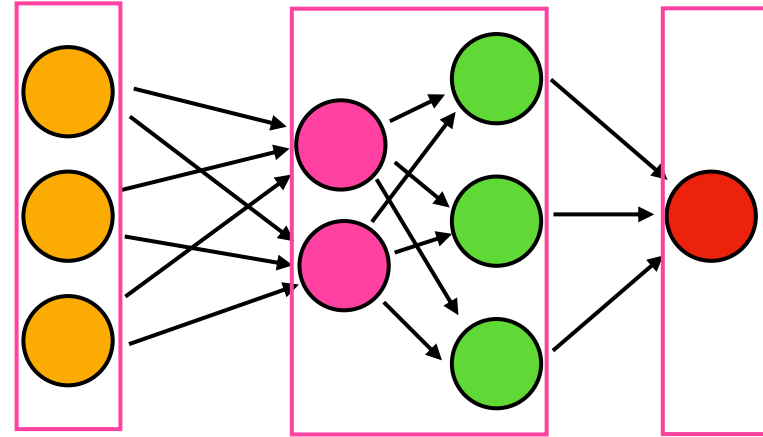
Több rétegű neurális hálózat



Rejtett rétegek száma ≥ 2



Deep Neural Network



Input

Hidden

Output

Átlagosan 6-800 milliárd paraméter

$(\cdot W_n)$

A mostly complete chart of

Neural Networks

©2016 Fjodor van Veen - asimovinstitute.org

- Backfed Input Cell
- Input Cell
- △ Noisy Input Cell
- Hidden Cell
- Probabilistic Hidden Cell
- △ Spiking Hidden Cell
- Output Cell
- Match Input Output Cell
- Recurrent Cell
- Memory Cell
- △ Different Memory Cell
- Kernel
- Convolution or Pool

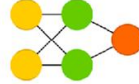
Deep Feed Forward (DFF)



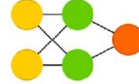
Perceptron (P)



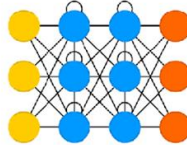
Feed Forward (FF)



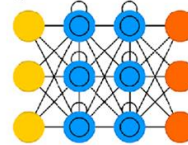
Radial Basis Network (RBF)



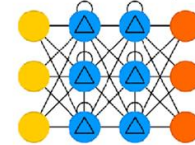
Recurrent Neural Network (RNN)



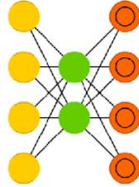
Long / Short Term Memory (LSTM)



Gated Recurrent Unit (GRU)



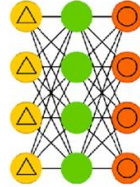
Auto Encoder (AE)



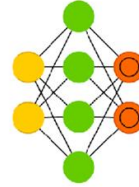
Variational AE (VAE)



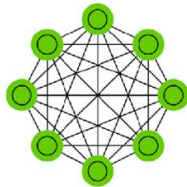
Denoising AE (DAE)



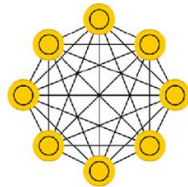
Sparse AE (SAE)



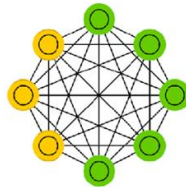
Markov Chain (MC)



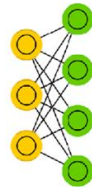
Hopfield Network (HN)



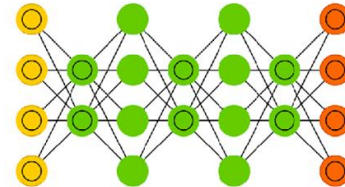
Boltzmann Machine (BM)



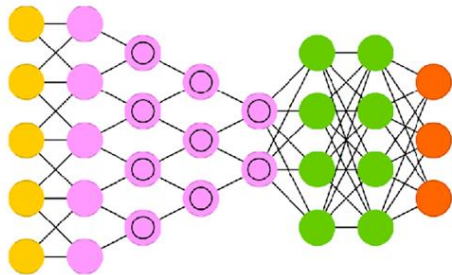
Restricted BM (RBM)



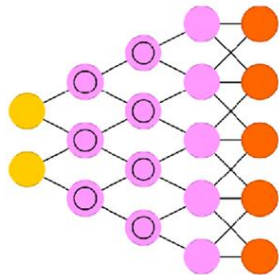
Deep Belief Network (DBN)



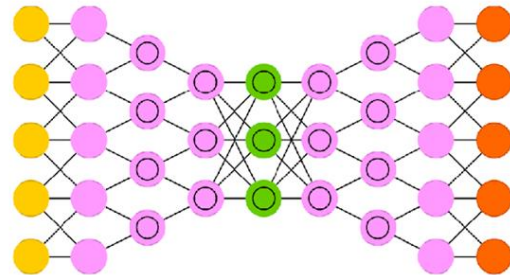
Deep Convolutional Network (DCN)



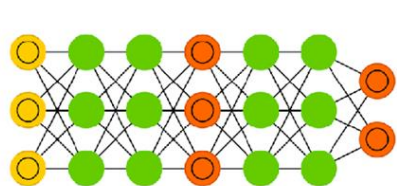
Deconvolutional Network (DN)



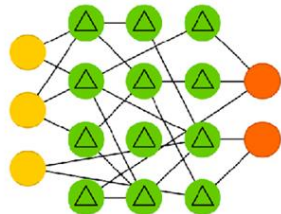
Deep Convolutional Inverse Graphics Network (DCIGN)



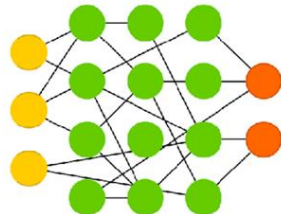
Generative Adversarial Network (GAN)



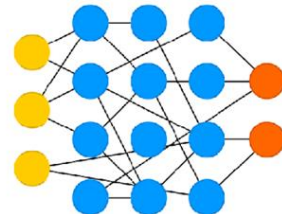
Liquid State Machine (LSM)



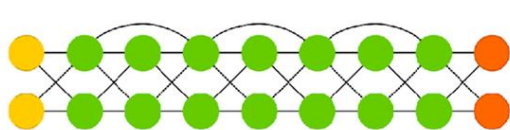
Extreme Learning Machine (ELM)



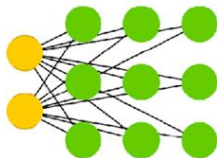
Echo State Network (ESN)



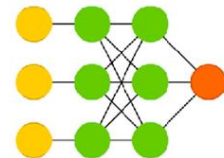
Deep Residual Network (DRN)



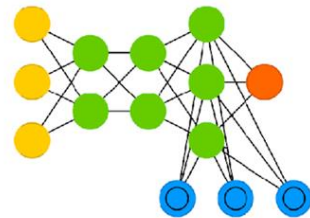
Kohonen Network (KN)



Support Vector Machine (SVM)



Neural Turing Machine (NTM)





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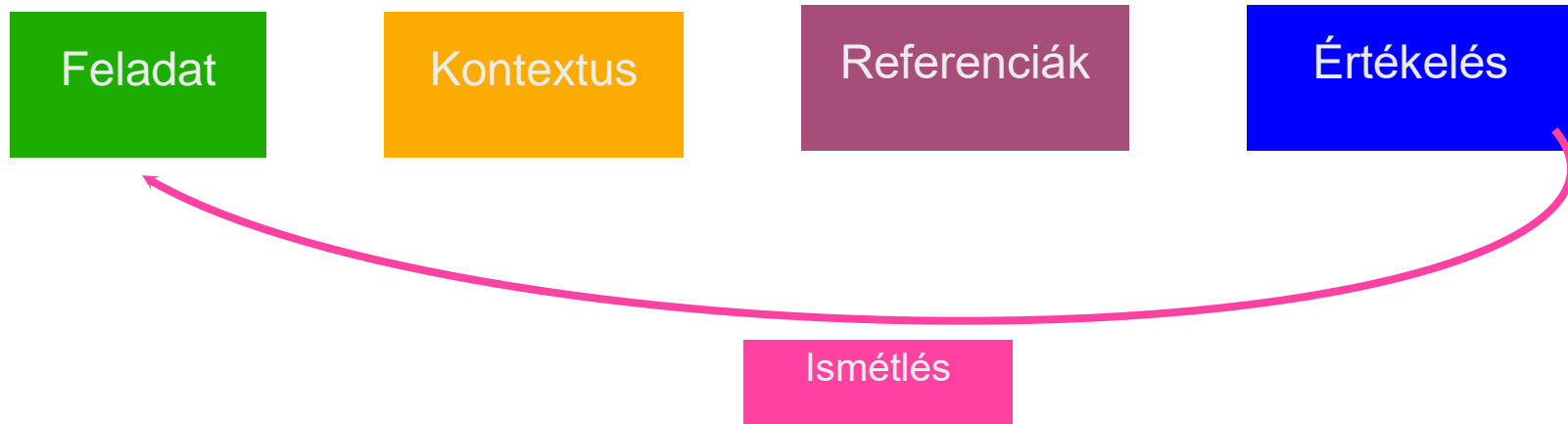
Prompt írás (prompting)

Pontos utasításokat adunk egy generatív mesterséges intelligenciának, hogy új információt kapjunk vagy elérjük a kívánt eredményt egy feladat során

- Szöveg
- Kép
- Videó
- Hanganyag
- Forráskód

Promptolási keretrendszer (prompting framework)

5 lépéses rendszer



Prompt írás (prompting)

Perszóna

Feladat

milyen fát ültessenek a kertembe? Java

A választás a kerted méretétől, talajadottságaitól, valamint a személyes ízlésedől függ. Írd meg, milyen fát szeretnél ültetni, és én ajánlok néhány fa, amit érdemes lehet fontolóra venni, figyelembe véve a magyar éghajlatot.

1. Juharfa (Acer)

- Szép őszi színt adó fa. A magyar juhar (Acer campestre) kisebb méretű, változó környezeti feltételeket.

2. Cseresznyefa (Prunus avium)

- Gyönyörű tavaszi virágzása és finom gyümölcse miatt kedvelt. A cseresznye napos, meleg helyeket.

3. Hársfa (Tilia)

Kontextus

Professzionális kertész vagy. Milyen fát ültessenek a kertembe ha az alábbiakat szeretném?

- 5 darab fa legyen amelyből legalább 4 örökzöld legyen
 - Ne legyen mérgező a kutyákra, kisállatokra
 - Ne legyenek szúrós, tüskés ágai, tűlevele, amik a földre esve felsérthetik az állatok lábait ha rálépnek
 - Lehetőleg gyors növekedésű, dekoratív fákat szeretnék.
- A választodat rendezd táblázatba!

Íme egy táblázat a javasolt fákról, amelyek megfelelnek a kívánt feltételeknek:

| Fa típusa | Örökzöld? | Mérgező? | Tüskék vagy szúrós ágak? | Növekedési sebesség | Dekoratív jellemzők |
|---|-----------|----------|--------------------------|---------------------|---|
| Leylandi ciprus (Cupressus x leylandii) | Igen | Nem | Nem | Gyors | Tömör, oszlopos növekedés, sűrű lombzat, könnyen formázható |
| Pörge fenyő (Pinus strobus) | Igen | Nem | Nem | Közepes – gyors | Szép, hosszú tűlevelek, lágy textúra, laza korona |
| Koloti tuja (Thuja) | Igen | Nem | Nem | Közepes | Sűrű, kúp alakú |

Rövid, lényegre törő mondatok.

Prompt írás (prompting)

Rövid, lényegre törő mondatok.

~~Nézd át alaposan a dokumentumot, és emeld ki belőle a legfontosabb adatokat és információkat, amelyek lényegesek lehetnek az összegzés szempontjából. Miután ezeket összegyűjtötted, alakítsd őket könnyebben érthető formába, majd készíts belőlük vizuális grafikonokat, hogy az adatok még szemléletesebbek legyenek. Végül rövidítsd le és rendezd a kulcsfontosságú információkat tömör, jól átlátható pontokba szedve, hogy azok könnyen értelmezhetőek és gyorsan átfuthatóak legyenek.~~

- Foglald össze a dokumentum legfontosabb adatait és információit.
- Készíts vizuális grafikonokat az összegzett adatokból.
- Rövidítsd le a legfontosabb információkat pontokba szedve.

Prompt írás (prompting)

Lengyel Zsolt

Prompt-H Kft.

2100 Gödöllő, Testvérvárosok útja 28.

Tel.: +36 28 430 695

Skype: skylite3145

Mobil: +36 70 311 2890

prompt.hu

On 2024. Sep 23., at 10:46, 1

wrote:

Tisztelt Lengyel Zsolt!

Köszönjük az eddig küldött tájékoztatását.

Kérdésének megfelelően tájékoztatom a további részletekről:

...

Válaszolj a levélre. Tegyél fel néhány kérdést pl:

- az előadás során az előadó gép előtt fog ülni vagy a kivetítő előtt fog állni/mászkalni?

- A 7 modulból álló szoftver bemutatás esetén csak a laptop képernyőjét kell rögzíteni és az oktató arcát nem?

- Van akadálya annak hogy a felvételt saját laptopról végezzük? (nagy teljesítményű, erre a célra alkalmas laptopra van szükség)

Referenciák

Mindig ellenőrizzük az AI által generált tartalmat.

Message ChatGPT

+

🌐

Search

...

ChatGPT can make mistakes.

Iterációs módszerek

1. Tekintsd át a promptolási keretrendszert
2. Oszd fel a promptokat rövidebb mondatokra, részfeladatokra
3. Próbáld meg máshogy megfogalmazni a feladatot
4. Vezess be korlátozásokat

2. SHT31 (1248) – Nagyon pontos, viszont érzékeny lehet a magas páratartalomra és a hőmérséklet-ingadozásra.

A DHT11 (1184) és a DHT11_o (1280) nem ajánlott, mert nem elég pontosak, és gyorsan tönkremehetnek a padlás viszonyai között.

Ha még jobb, hosszú távon is megbízható érzékelőt szeretnél, akkor SHT31, BME280 vagy akár egy ipari SHT35 szenzort érdemes beszerezni, mert ezek jobban bírják az extrém környezetet is. De ha csak a listából választhatsz, akkor az AM2301 a legjobb opció padlásra.



Melyik a strapabíróbb?

Edit message

A listából a két használható opció közül a strapabíróbb szenzor padlásra az AM2301 (1216).

Értékelés



Hallucináció

Mennyi R betű van a "narrátor" szóban?

A "narrátor" szóban két R betű található.

A **hallucináció** az, amikor egy AI eszköz olyan kimeneteket ad, amelyek következetlenek, helytelenek vagy akár értelmetlenek.

Elfogultság

Az ember által létrehozott tartalommal betanított mesterséges intelligencia rendszerek gyakran akaratlanul is öröklik az adott tartalomban jelen lévő előítéleteket, beleértve a nemmel és a rasszal kapcsolatosakat is.

https://lmarena.ai/

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| Overall | | <input type="checkbox"/> Style Control | <input type="checkbox"/> Show Deprecated | #models: 205 (100%) #votes: 2,668,091 (100%) | | | |
| Rank* (UB) | Rank (StyleCtrl) | Model | Arena Score | 95% CI | Votes | Organization | License |
| 1 | 1 | chocolate...(Early_Grok-3) | 1402 | +7/-6 | 7829 | xAI | Proprietary |
| 2 | 4 | Gemini-2.0-Flash-Thinking-Exp-01-21 | 1385 | +5/-5 | 13336 | Google | Proprietary |
| 2 | 2 | Gemini-2.0-Pro-Exp-02-05 | 1379 | +5/-6 | 11197 | Google | Proprietary |
| 2 | 1 | ChatGPT-4o-latest...(2025-01-29) | 1377 | +5/-6 | 10529 | OpenAI | Proprietary |
| 5 | 2 | DeepSeek-R1 | 1361 | +8/-7 | 5079 | DeepSeek | MIT |
| 5 | 8 | Gemini-2.0-Flash-001 | 1356 | +6/-5 | 9092 | Google | Proprietary |
| 5 | 2 | o1-2024-12-17 | 1353 | +6/-5 | 15437 | OpenAI | Proprietary |
| 8 | 6 | o1-preview | 1335 | +4/-4 | 33169 | OpenAI | Proprietary |
| 8 | 8 | Qwen2.5-Max | 1332 | +7/-7 | 7370 | Alibaba | Proprietary |
| 10 | 9 | DeepSeek-V3 | 1317 | +4/-4 | 17717 | DeepSeek | DeepSeek |



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- ✓ Access to o1 pro mode, which uses more compute for the best answers to the hardest questions
- ✓ Extended access to Sora video generation
- ✓ Access to Operator research preview (U.S. only)






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Estimated monthly

[Cost breakdown](#)

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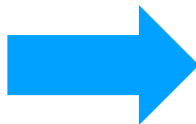
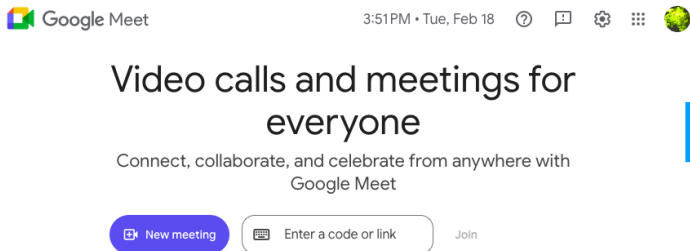
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Automatikus Meeting jegyzet készítése



Feb 17, 2025

Maria, Laszlo call

Invited Laszlo [redacted] Zsolt Lengyel Maria [redacted]

Attachments Maria, Laszlo call

Meeting records Transcript

Summary

Laszlo [redacted] and Zsolt Lengyel, along with Maria [redacted] discussed an AI-driven multilingual tourism app addressing language accessibility issues in tourism. The group agreed on a phased data collection approach and a subscription model for state-level clients, focusing on unique selling points like hyper-localized information and user-friendly interface options in their marketing strategy. Next steps include refining the app concept and preparing a presentation for Brand USA or Miles Partnership, followed by a follow-up meeting with [redacted]

Details

- **Meeting Invitation and Logistics** Laszlo [redacted] and Zsolt Lengyel coordinated inviting Maria [redacted] to a meeting, utilizing both text message and email due to [redacted]'s travel and lack of a business email. They successfully added Manzella to the meeting.
- **Project Discussion: AI-Driven Tourism App** Maria [redacted] proposed an AI-powered app to provide multilingual tourism information, addressing the need for language accessibility in areas with limited multilingual tour guides. This stemmed from their experiences

Prompt Beküldött Önletrajzok

Sources

+ Add source

Select all sources

07018_1_03_01_0.pdf

2022_Hun_CV (1)_0.pdf

230 sources

The provided texts primarily consist of Curriculum Vitae (CVs) and resumes from individuals with varied backgrounds. These documents highlight diverse skill sets, work experiences, and educational qualifications, showcasing a range of professions from food engineering to sales, administration, and customer service. Many of these documents detail language proficiencies, technical skills, and professional competencies. Some documents mention specific projects, certifications, and educational achievements, while others describe work history and personal attributes. Additional texts point to business-related documents like a statement from a company or news about AI. Together, they give a snapshot of individuals seeking employment and their diverse qualifications.

Save to note

Add note

Audio Overview

Briefing doc

Titkárnyi pozícióra listázd ki a beadott önletrajzok közül a legmegfelelőbbet. Lehetőleg tapasztalt kollégát keres mert ez irodavezetői pozíció lesz.

To identify the most suitable candidates for a secretarial position with leadership potential, drawing upon the provided CVs and focusing on experience, the following candidates appear most promising:

- Éva:** Experience includes secretarial and HR tasks, such as administering incoming mail, managing phone calls, scheduling appointments, preparing documents for meetings, and creating reports 1. Also handled office supply procurement and maintained contact with partners 2.
- Hajnalka:** Has experience in bookkeeping, treasury management, account management and customer service 3.
- Judit:** Has experience as a records manager and organising clerk. Duties included managing job postings, preparing employment contracts, maintaining attendance and leave records, and coordinating training 5. Also has experience liaising with payroll, accounting and finance departments 6.
- Rita:** Experience as an office manager, with responsibilities such as managing finances, personnel, administration, commerce, logistics, warehousing and records 7.
- Ágnes:** Has experience as an office manager, with duties such as liaising with tenants, coordinating with finance and accounting departments, compiling contracts, processing invoices, and general administrative tasks 10.
- Dorottya:** Experience includes managing the secretariat of an institution, handling financial management tasks, and performing administrative duties related to education, payroll, and labour 12.
- Zoltán:** Experience in veterinary sector in checking and stocking 13.
- Györgyi:** Experience in managing office, as well as communication with accounting and payroll 14.

Next Steps: Conduct preliminary interviews with these candidates to assess their leadership skills, communication abilities, and

Start typing... 230 sources

What kind of damage does sántaság cause? What tasks did Kóti Judit have? Where did Szabó Anikó work?

NotebookLM

<https://notebooklm.google.com/>

230 Darab PDF
önletrajz elemzése

Elon Musk debuts Grok 3, an AI model that he says outperforms ChatGPT and DeepSeek

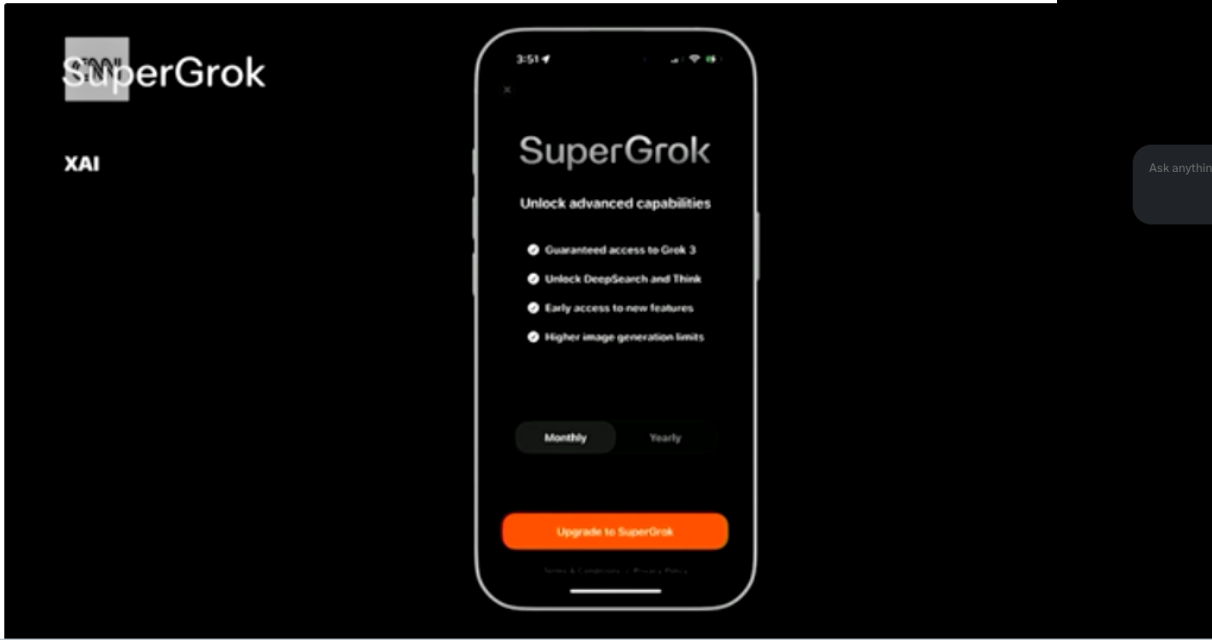


By Clare Duffy, CNN

🕒 3 minute read · Updated 1:39 PM EST, Tue February 18, 2025



<https://grok.com/>





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Youtube Videó feldolgozásához

<https://notegpt.io/>

NoteGPT Detail

Share Dark Light English

AI Notes AI Chat

You

the video thumbnail posits that robot lawnmowers are a "big lie". what is the evidence that lead the host to make this conclusion?

NoteGPT

The host concludes that robot lawnmowers may be a "big lie" due to multiple insights drawn from practical experience. Firstly, despite frequent use of the robot mower, the lawn still accumulates thatch and debris, indicating that the mower cannot fully replace traditional care methods like scarifying and aerating. The host highlights that sales pitches often claim minimal maintenance is required with robot mowers, but in reality, regular lawn treatments remain essential for optimal health. This discrepancy between marketing claims and actual lawn care needs underpins the host's skepticism about the

cannot deliver on

Transcript Discover

00:00
What about you! Welcome to Premier Lawns Videos going to be doing some myth busting. Let's go day we were scarifying this big garden. Now, I have you whenever you have a robot lawnmower there's a

00:35
Just to have a quick look at this core, there's not a lo This is predominantly a rye grass lawn. Not expecting Going to give a quick shout out to BEN SIMS over in I love your content! A man after my own heart. So the

01:34
and we'll put it in that, and then that's going to go in compost bin. So Happy Days! So the customer just uses this here,

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<https://www.youtube.com/watch?v=VqLWWYfCEbI>



🦄 DeepSeek-R1 is now live and open source, rivaling OpenAI's Model o1. Available on web, app, and API. Click for details.

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NVIDIA HGX A100 640GB - 935-23587-0000-204



Graphics Engine: Ampere Memory size: 640 GB Theoretical performance: 156 TFLOP

Minden NVIDIA Ampere, NVIDIA Grace Hopper, NVIDIA Ada Lovelace és NVIDIA Blackwell architektúrájú GPU

NCNR (nem visszavonható, nem visszatéríthető) feltételekkel rendelhető 5. termékre bizonyos országokban szankciók vonatkoznak, és a végfelhasználót iga

Ezeket a GPU kártyákat közvetlenül és egyedi B2B áron tudjuk sz **forduljon hozzánk kérdéseivel.**

| | |
|---|---------------------------|
| termékkód | 214.166399 |
| Part number | 935-23587-0000-204 |
| Alternatív Part No. | GPU-NVHGX-A100-88D-EX2Y |
| Supermicro Part No. | GPU-NVTHGX-A100-SXM4-88D |
| Gyártó | NVIDIA |
| Elérhetőség | A beszállítónál készleten |
| Garancia (hónap) | 36 hónap |
| Súly | 2 kg |
| Az ár tartalmazza az összes törvényes díjat | |

49 386 075,00 HUF ÁFA nélkül
62 720 315,25 HUF ÁFA-val

1 db

Örkutya beállítása Hozzáadás a termékek összehasonlító

Hardware Requirements for DeepSeek-R1

| Model Variant | Parameters (B) | VRAM Requirement (GB) | Recommended GPU Configuration |
|-------------------------------|----------------|-----------------------|--|
| DeepSeek-R1 | 671 | ~1,342 | Multi-GPU setup (e.g., NVIDIA A100 80GB x16) |
| DeepSeek-R1-Distill-Qwen-1.5B | 1.5 | ~0.7 | NVIDIA RTX 3060 12GB or higher |
| DeepSeek-R1-Distill-Qwen-7B | 7 | ~3.3 | NVIDIA RTX 3070 8GB or higher |
| DeepSeek-R1-Distill-Llama-8B | 8 | ~3.7 | NVIDIA RTX 3070 8GB or higher |
| DeepSeek-R1-Distill-Qwen-14B | 14 | ~6.5 | NVIDIA RTX 3080 10GB or higher |
| DeepSeek-R1-Distill-Qwen-32B | 32 | ~14.9 | NVIDIA RTX 4090 24GB |
| DeepSeek-R1-Distill-Llama-70B | 70 | ~32.7 | NVIDIA RTX 4090 24GB x2 |

2025 International CES

Jan 7, 2025 – Jan 10, 2025

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72 Blackwell GPUs
1.4 ExaFLOPS TE FP4

576 Memory Chips
14 TB
1.2 PB/s

18 NVLink Switches
130 TB/s All-to-All

Grace Blackwell NVLink72

130 Trillion Transistors

2,592 Grace CPU Cores

72 ConnectX

18 BlueField DI

<https://youtu.be/k82RwXqZHY8?t=1968>

Köszönöm a figyelmet!

Lengyel Zsolt



PROMPT

IT & Security