Intro to AI in Probation and Parole

Enhancing supervision through responsible AI adoption

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Why AI in Community Supervision?

- • Overwhelming caseloads and limited resources
- • 45% of prison admissions due to supervision violations
- • Alert fatigue from monitoring systems
- • AI as a strategic tool, not a replacement

What is AI ? Plain Language!

Artificial Intelligence refers to computers performing tasks that typically require human intelligence.

What is AI?

- AI = Machines performing intelligent tasks
- Everyday examples: voice assistants, predictive text
- Machine learning: learns patterns from data
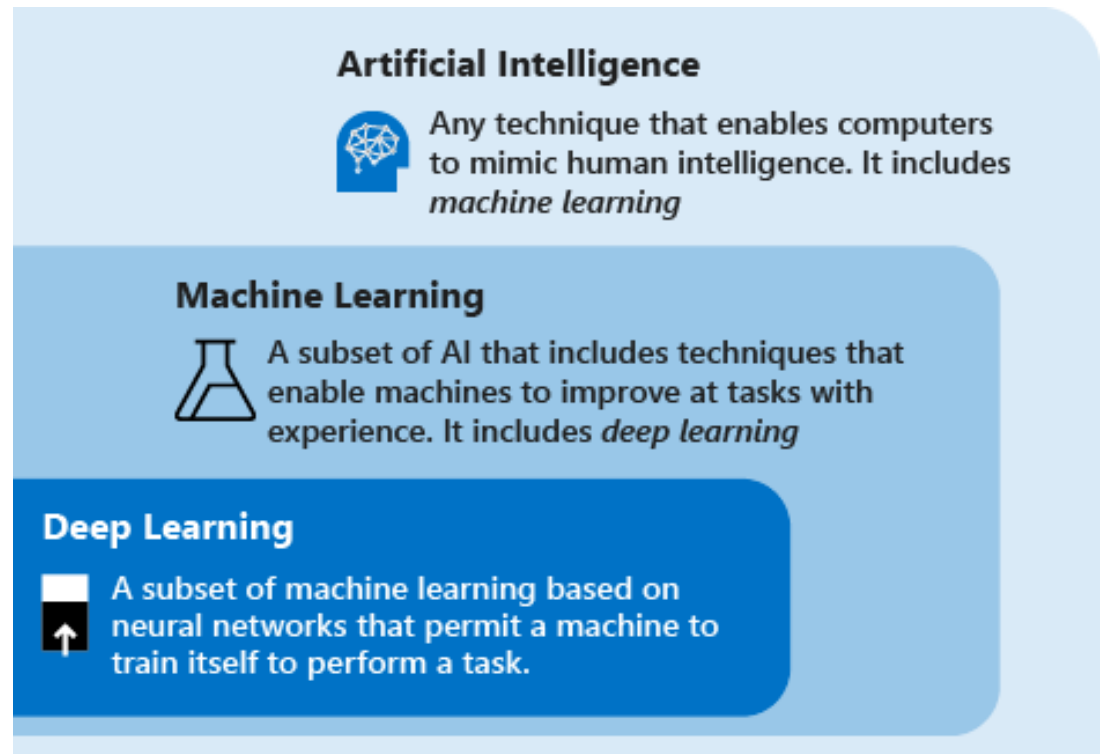- Generative AI: creates text, summaries, reports
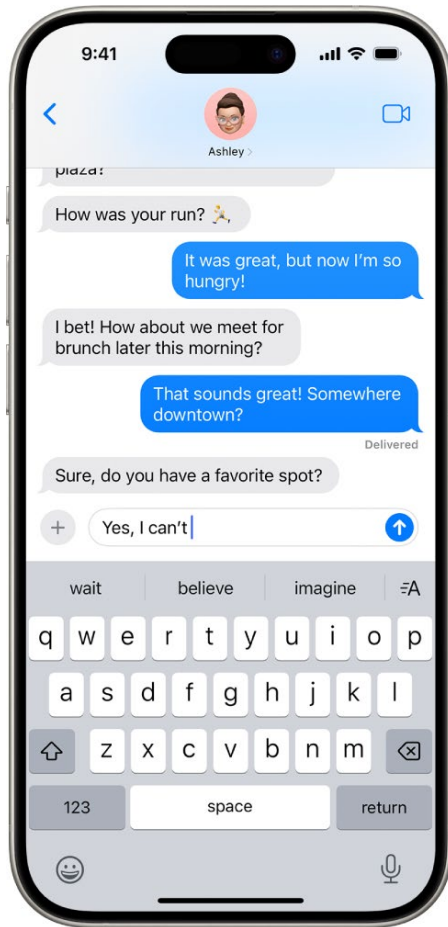
Predictive text; tap a suggestion to apply.
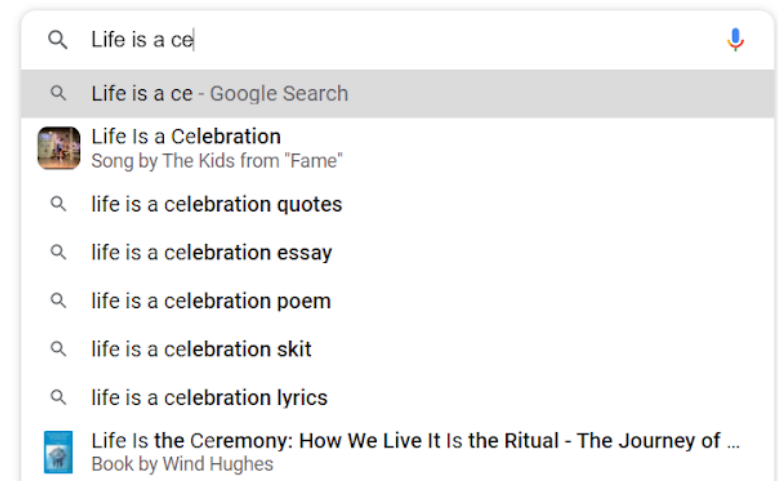
You <u>are already</u> using AI!

Artificial Intelligence - Basics

Artificial Intelligence

Any technique that enables computers to mimic human intelligence. It includes *machine learning*

Machine Learning

A subset of AI that includes techniques that enable machines to improve at tasks with experience. It includes *deep learning*

Deep Learning

A subset of machine learning based on neural networks that permit a machine to train itself to perform a task.

- Machine Learning
- Generative AI or LLMs (Large Language Models) – ChatGPT's Co-Pilot, Google Gemini etc

Machine Learning

Unsupervised Learning	Supervised Learning	Semi-Supervised Learning	Reinforcement Learning
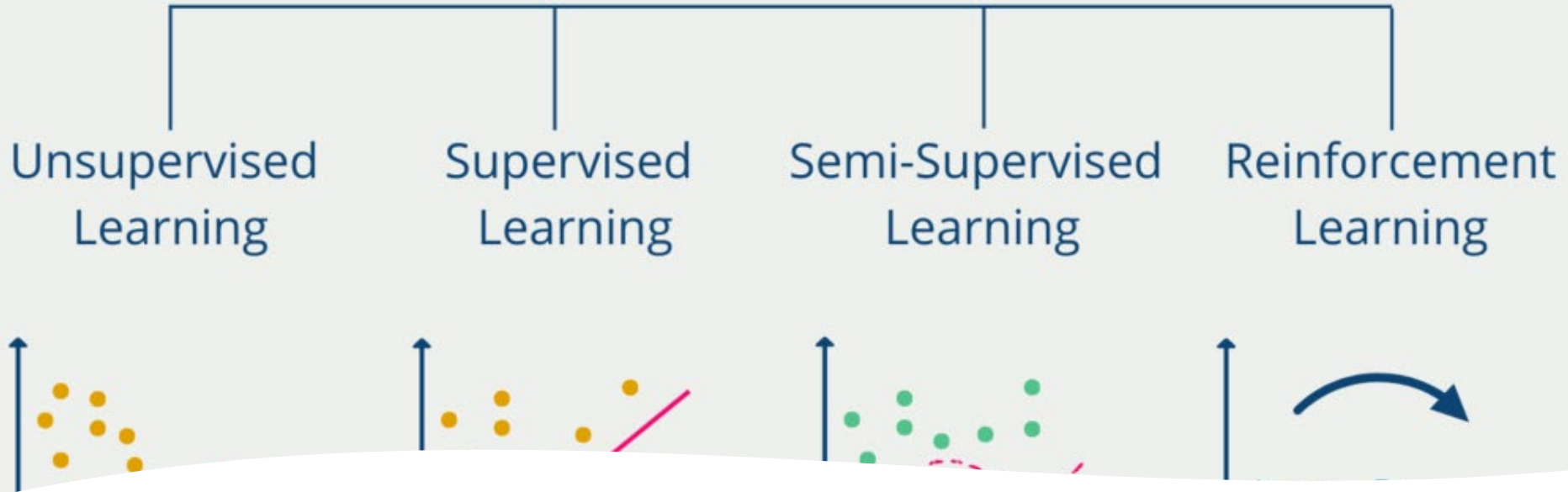
Machine Learning

Instead of teaching a computer rule (If x then do Y) we train it to "learn" by feeding it patterns
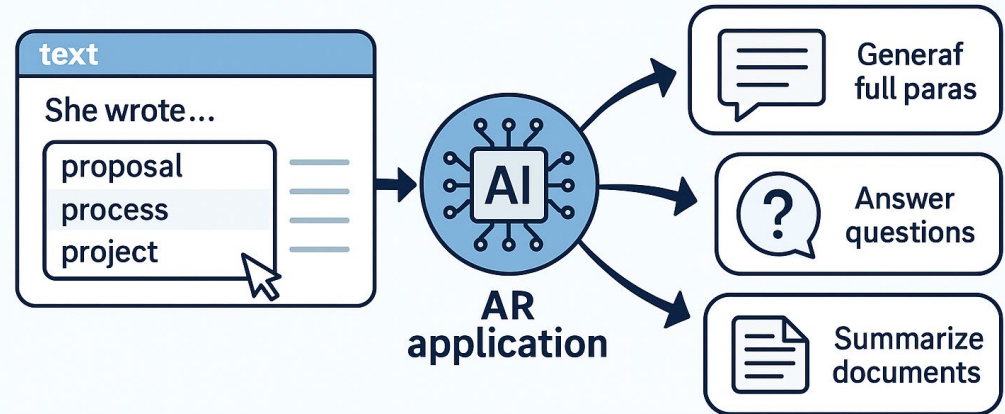
Generative AI

- AI models that can *generate* human-like text, images or other content

- Generative AI could potentially help officers by drafting routine reports or case notes, summarizing lengthy documents, or even role-playing in training scenarios.

- AI can **make mistakes or fabricate info**

What is a Large Language Model (LLM)?

An LLM is a type of Artificial Intelligence that has been trained to understand and generate human language.

text

She wrote…

proposal
process
project

AI

AR application

Generaf full paras

Answer questions

Summarize documents

Think of it like a very advanced auto-complete—but instead of predicting just the next word, it can generate full paragraphs, answer questions, summarize documents, or even hold covertions.

- **An LLM is a type of Artificial Intelligence** that has been trained to understand and generate human language.
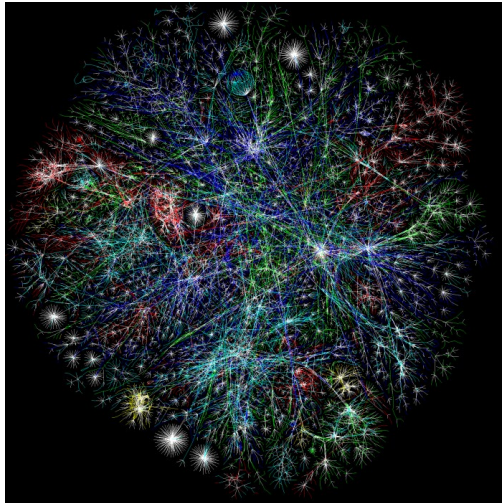
How does it work?

Training – Tokens – Neural Networks – Attention Mechanism – Output Generation

- **Training** on Text Data
  - The model is fed **massive amounts of text** (books, articles, websites).
  - It reads billions of sentences to learn **patterns of language**, grammar, facts, and even reasoning.

Training them is more involved.

Think of it like compressing the internet.

Chunk of the internet, ~10TB of text

Entire internet as of 2023 is around 120 Zeta bytes!

6,000 GPUs for 12 days, ~$12MM
~1e24 FLOPS

~140GB file
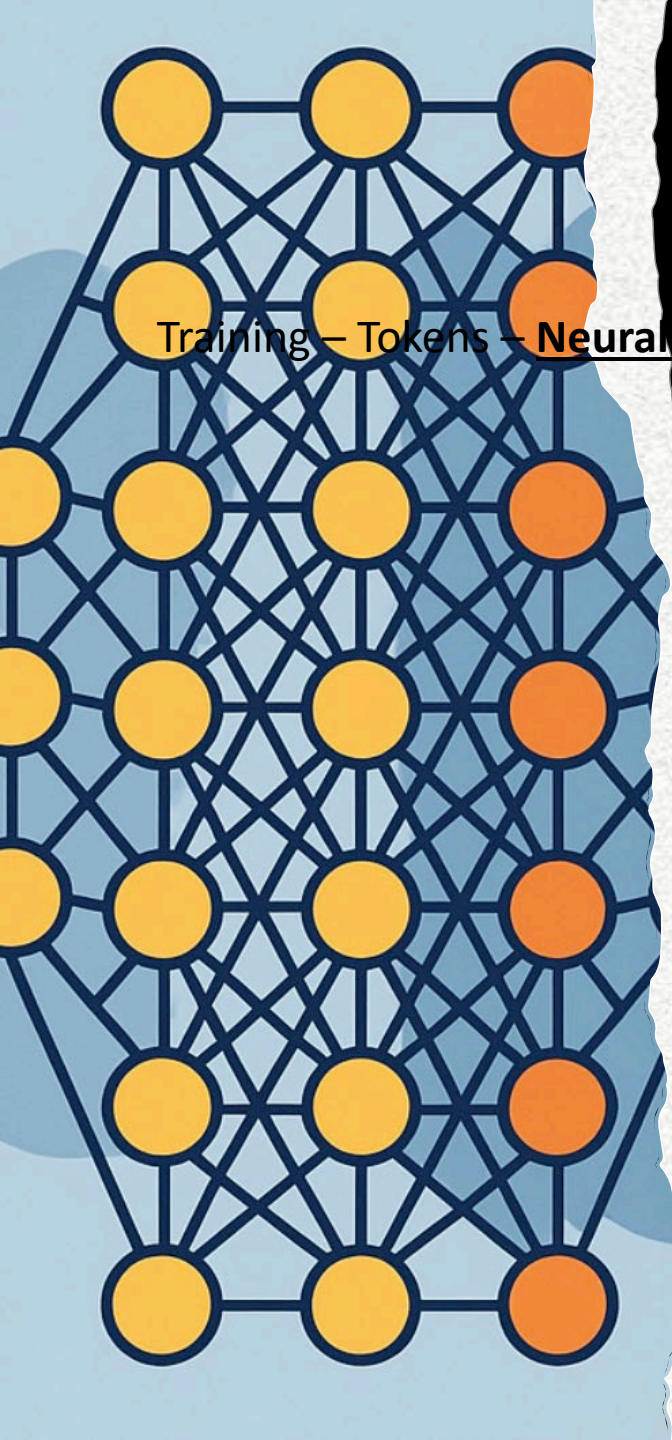
parameters.zip

*numbers for Llama 2 70B

How does LLM (ChatGPT) work?

Training – **Tokens** – Neural Networks – Attention Mechanism – Output Generation

- Tokens – The Building Blocks
  - LLMs don't read text like humans.
  - They break it into small pieces called **tokens** (think words or chunks of words).
  - The model predicts **what token is most likely to come next**, based on what came before.
  - This is why it feels like it's "writing like a person" - it's statistically choosing the most natural continuation.
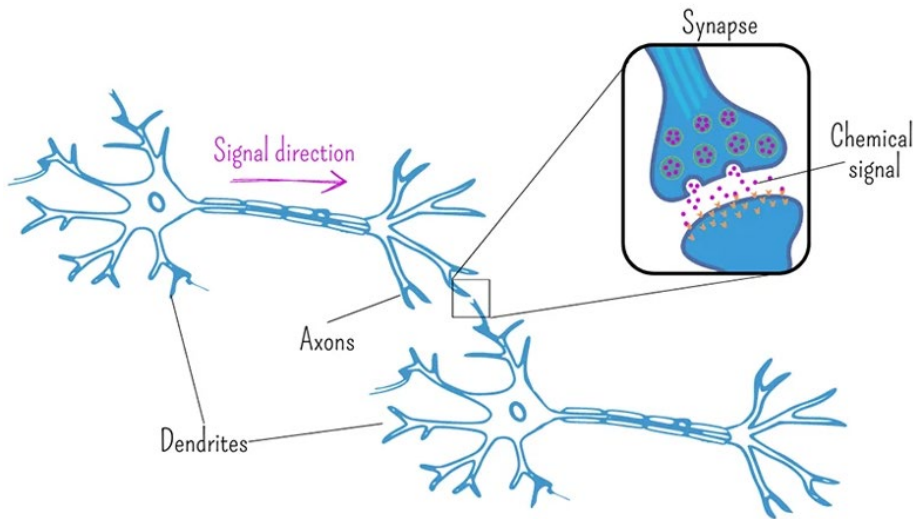
How does LLM (ChatGPT) work?

- **Neural Networks and Layers**
  - The core of an LLM is a **neural network** with many layers (sometimes hundreds).
  - Each layer processes information differently:
  - Early layers learn **basic patterns** (like spelling or sentence structure).
  - Deeper layers learn **complex meaning and relationships**
- These networks mimic how **neurons** in the brain fire and connect, but digitally.
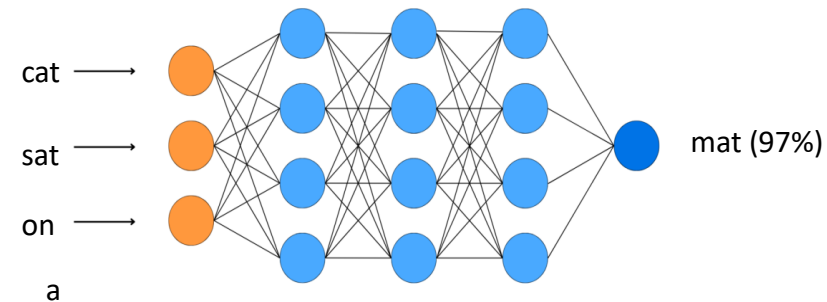
How does LLM (ChatGPT) work?

Training – Tokens – **Neural Networks** – Attention Mechanism – Output Generation

Neurons in our brain

Neurons in a computer

How does LLM (ChatGPT) work?

Training – Tokens – Neural Networks – **Attention Mechanism** – Output Generation

- LLMs use a feature called **"attention"** to figure out which words in a sentence matter most.

- This mechanism helps the model **focus on relevant context**, not just blindly predict words.

How does LLM (ChatGPT) work?

Training – Tokens – Neural Networks – Attention Mechanism – **Output Generation**

- **Output Generation**
  - When you ask a question or type a prompt, the LLM encodes it into numbers, runs it through its neural network, and produces a response one token at a time.

- It doesn't "know" facts like a human—it calculates **probabilities** based on its training data.

LLMs (ChatGPT) Can Make Mistakes!

Hallucinations: LLMs can sometimes generate made-up information because they **predict text patterns**, not truth.

Biases: If training data has bias (e.g., unfair stereotypes), the model can accidentally repeat them.

Knowledge Cutoff: They only "know" information up to the date they were trained.

Where's the "Intelligence"?

It's not thinking or reasoning like a person.

It's more like an **ultra-powerful statistical text engine**.

Because it's seen so many patterns, it can **mimic understanding** and produce responses that feel intelligent.

Challenges & AI Solutions

High caseloads → AI automates reminders, scheduling, paperwork

Technical violations → Predictive alerts & early interventions

Alert fatigue → AI filters noise, prioritizes alerts

Limited support → Apps with resources, coaching messages

Responsible AI Use

- AI as support, not decision-maker

- Address bias and ensure data quality

- Maintain privacy and transparency

- Train staff, build trust, and keep humans in the loop
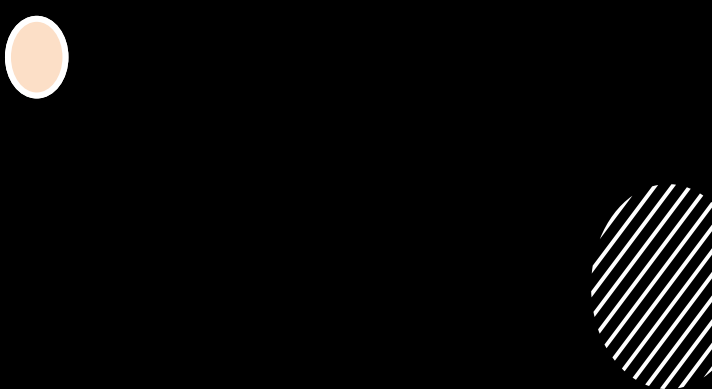
Getting Started with AI

Consult with your IT policy regarding AI usage prior to using publicly available AI Systems.

Usage of AI tools on unapproved platforms is a liability

- Start small with pilot projects
- Engage officers and clients early
- Learn from other agencies' successes
- Scale responsibly for improved outcomes

Key Takeaways

AI enhances officers' abilities, doesn't replace them

Tangible benefits: fewer violations, improved efficiency

Human oversight, ethics, and gradual adoption are essential

Thank you!

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