Practical Uses of AI for Zimbabwe

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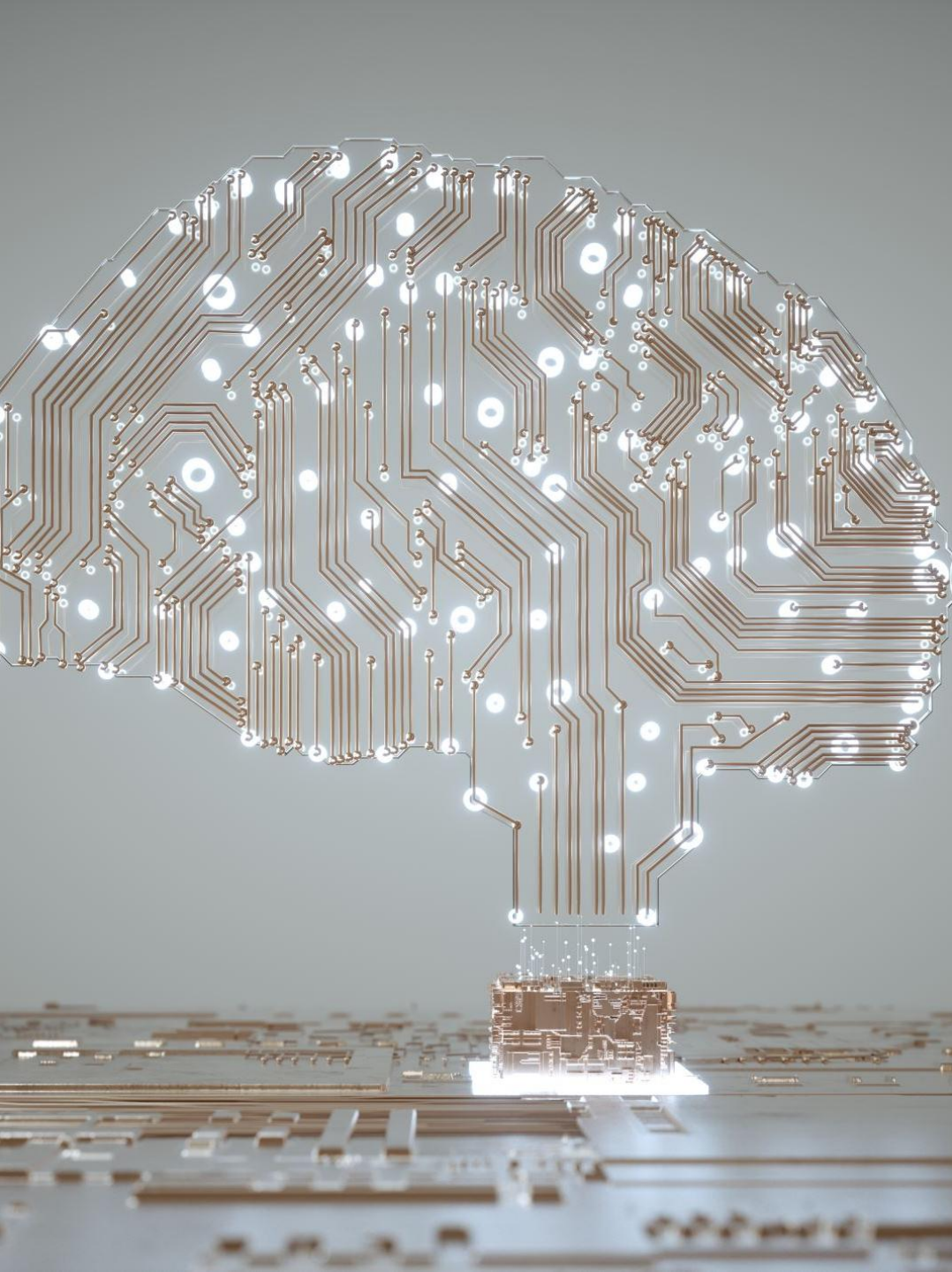
Machine learning pioneers win Nobel prize in physics

Geoffrey Hinton and **John Hopfield** awarded "foundational discoveries and inventions that enable machine learning with artificial neural networks".

John Hopfield, left, and Geoffrey Hinton will share the 11m Swedish kronor (about £810,000) prize. Photograph: AP

Demonstrated how computer programs that draw on neural networks and statistics could form the basis for an entire field, which paved the way for swift and accurate language translation, facial recognition systems, and are what we call generative AI.

Definitions of AI

Artificial Intelligence (AI) can be defined as the ability to simulate human intelligence in machines. AI can perform tasks such as technical reasoning, problem-solving, and learning which give decision-making power.
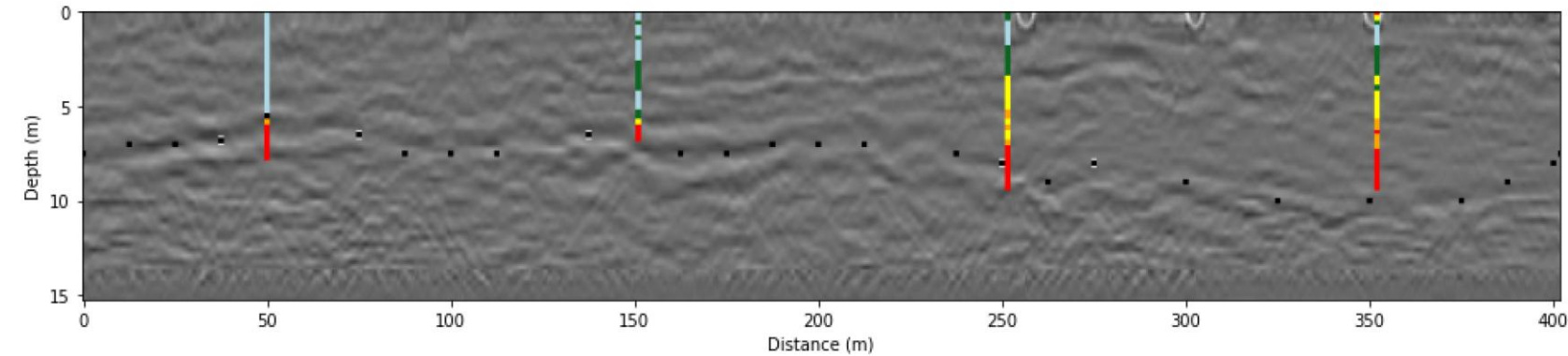
Definition o̶ ̶mies Geologists.

A set of technologies that enable computers to perform a variety of advanced functions, including the ability to:

1. see,
2. understand
3. translate language,
4. analyze data and images,
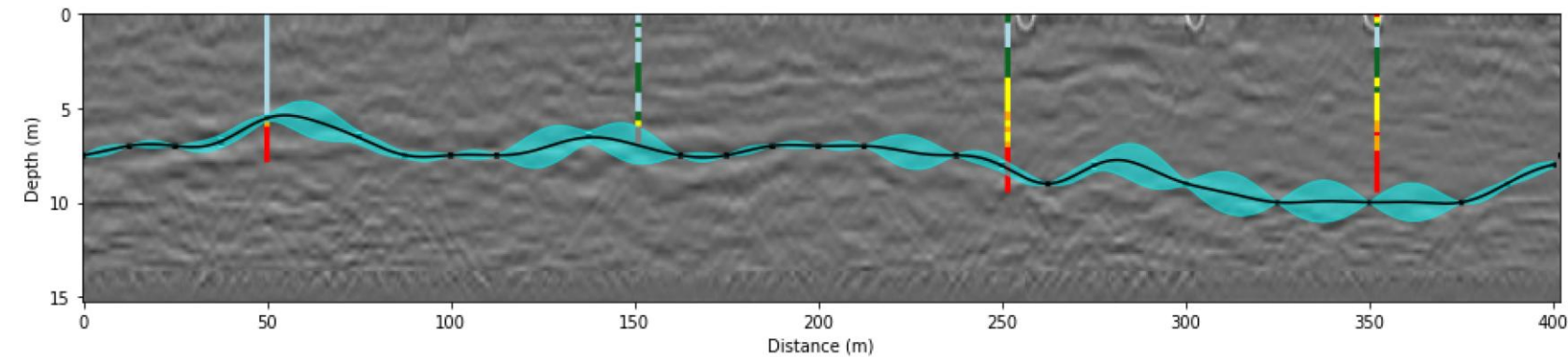5. make recommendations,
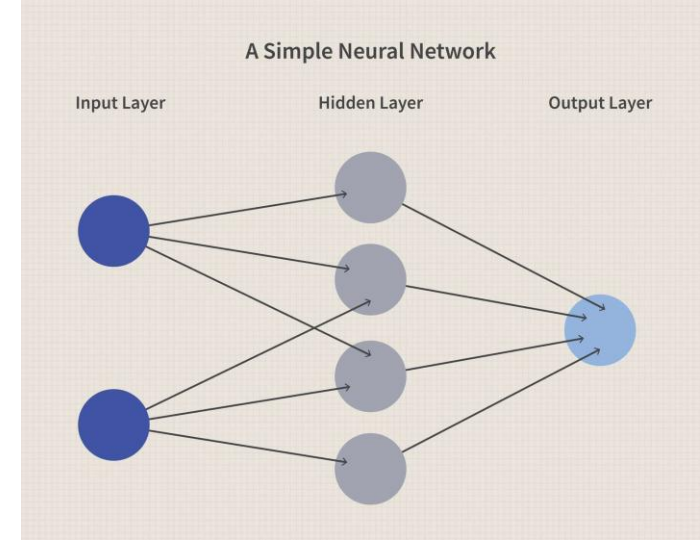6. and more eg take action….

Forget the Hype!
What about Zimbabwe?

(a)

(b)

A Simple Neural Network

Neural Networks simply join the dots and this is what geologists do as per instruction or probability.

Start joining the dots – these are gold mines

There must be a strategy in your Arsenal to create data that can be used by AI.

AI Ready data

Do a one-pager guiding document that will be your base case.

Legend

- ⋯⋯ Fence
- ⬛ Artisanal shaft
- ── peerless_orebody
- ── ore_stringers
- ── bulged_zones
- ▭ Pickstone Claims

Pickstone_Minesite

7975200.000000

7975200.000000

Bono

Concession West

Pickstone 21

Bono 2

Revenue 5

Concession West 4

Concession Hill W

Concession Hill W 2

Warren 2

Searchable da

I asked Gemini to
find deposits and
specified Zimbabwe

🗺️ **Map of Major African Exploration Projects (Including Ariana Resources)**

The map below includes the locations for all the specific mining projects detailed in the table.

Company	Mineral	Country	Project / Mine Location	Date of Announcement	Type of Drilling/Technology
Ariana Resources (AAU)	Gold (Au)	**Zimbabwe**	**Dokwe Gold Project**	**Oct 15, 2025**	RC Rig Mobilization (c. 11,000m total program)
Ariana Resources (AAU)	Gold (Au)	**Zimbabwe**	**Dokwe Gold Project**	**Jun 26, 2025**	Updated Economic Model & PFS
Kavango Resources PLC	Gold (Au)	Zimbabwe	Nightshift Gold Project, Hillside Project	Oct 20, 2025	Resource Definition Drilling

AI-Driven Geological and Ore Analysis

- The truth is the technology is Generative so it creates content.

- It is fast
- It is sometimes accurate (just like geologists)

- Image by Gemini

Use the technology

Mining™

- **Diamond Drilling Costs:** Industry reports project a decrease in African diamond drilling costs (up to 15% in 2025) due to adoption of **automated rigs** and advanced targeting of sites

Anglo embraced AI and all sites are showing savings.

Debswana used AI to optimize hauling routes and blast fragmentation – saved 17% on tyres.
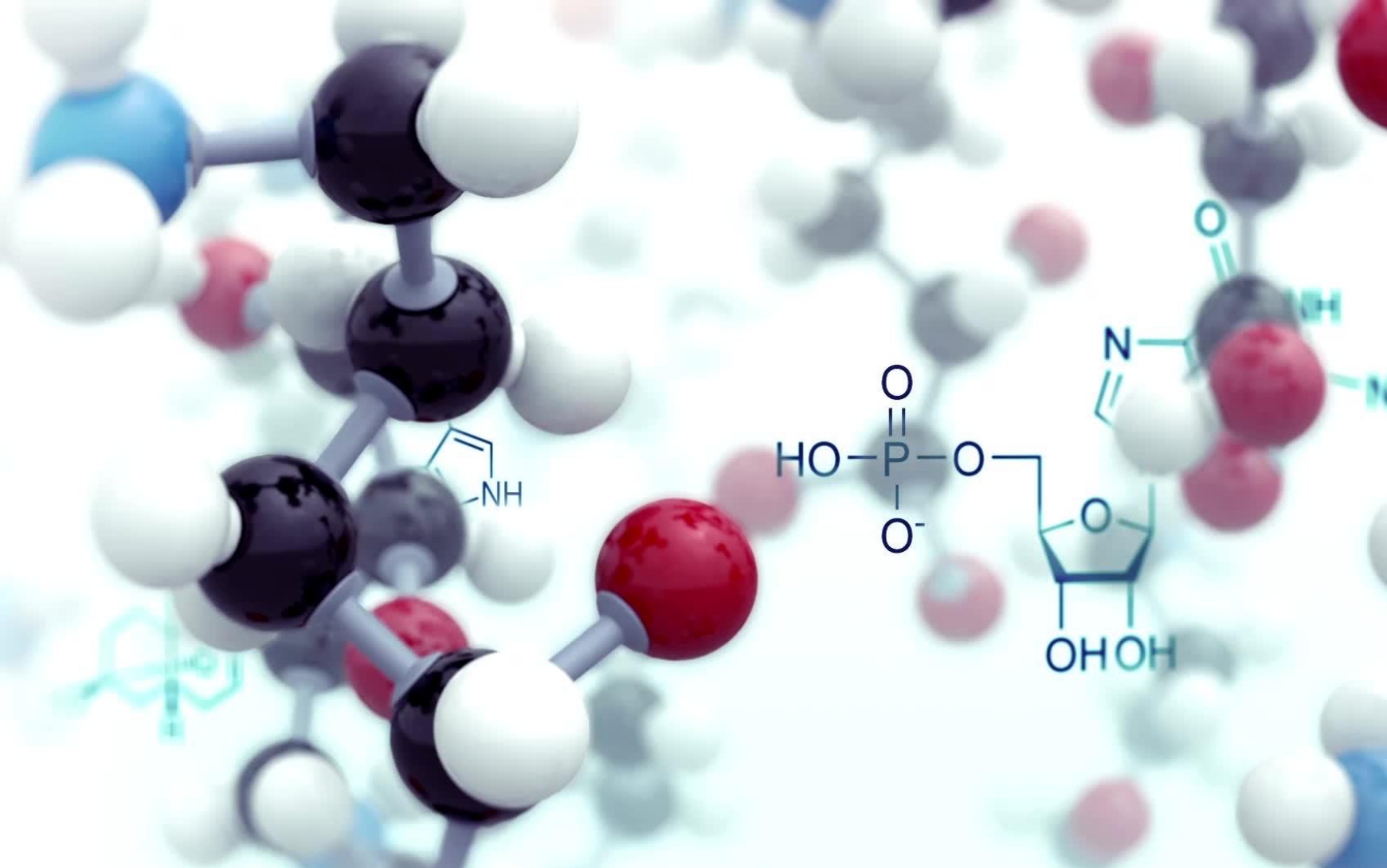
Zimbabwe use cases

Intelligent Ore Sorting

Optimizing Logistics

Resource and Grade Prediction

AI-Powered Training

Environmental Monitoring:

Thank you