Is AI going to take my Job? Threat, Tool or Teammate?

Moving towards a naïve Geospatial industry?

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Define tomorrow.

UNISA university of south africa

The ethical use of AI in education

I use ChatGPT!

Draw pictures for study material

Understand concepts

Break writer's block

Set up MCQ questions

Technical assistance

Am I ethical?

Because….

Created from study material I developed

Not for any other use

Rewrite in my own words

Scrutinize the questions (from my notes)

Has not been of much help

Students also use LLMs!

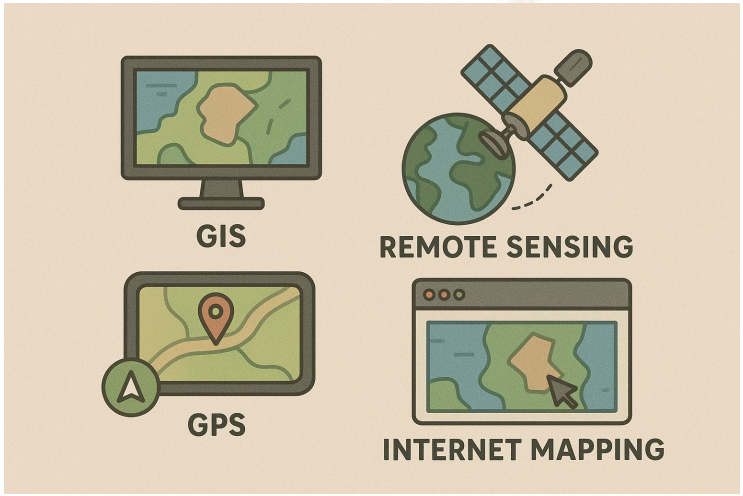
Answer assessments

Are they ethical?

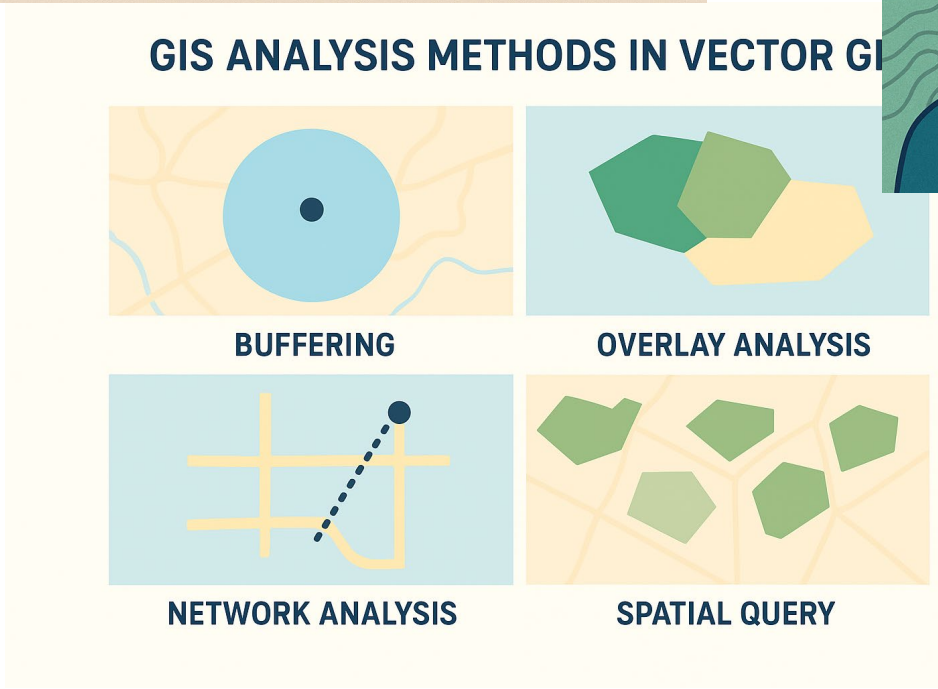
Because….

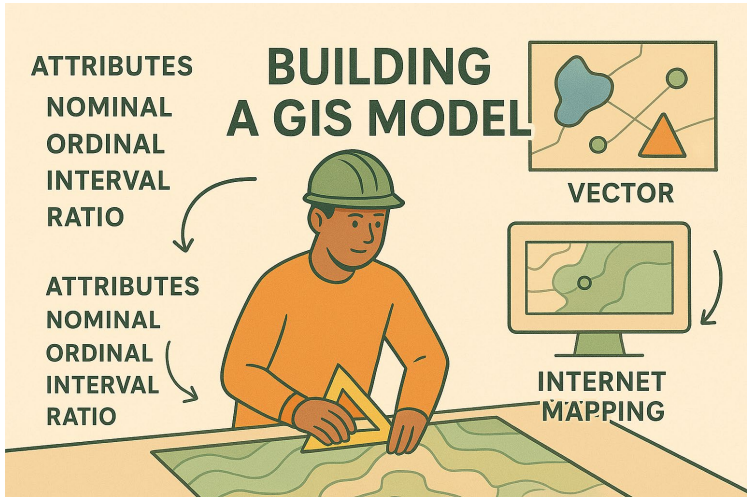
They copy and paste .
Present as their own work

Example:



ture from this description: Now that we have defined the
stion and the criteria that will guide us to solve the problem,
t building the GIS model. We will focus on the two main GIS
ls namely raster and vector GIS and you will learn how
a is represented in each of the two models.
o learn about the measurement scales used for attribute
neasurement scales are essential as these will influence how
present your data on a map and which calculations you can
e attribute data





But ChatGPT also trains **you**: Example

Draw a picture of a person standing

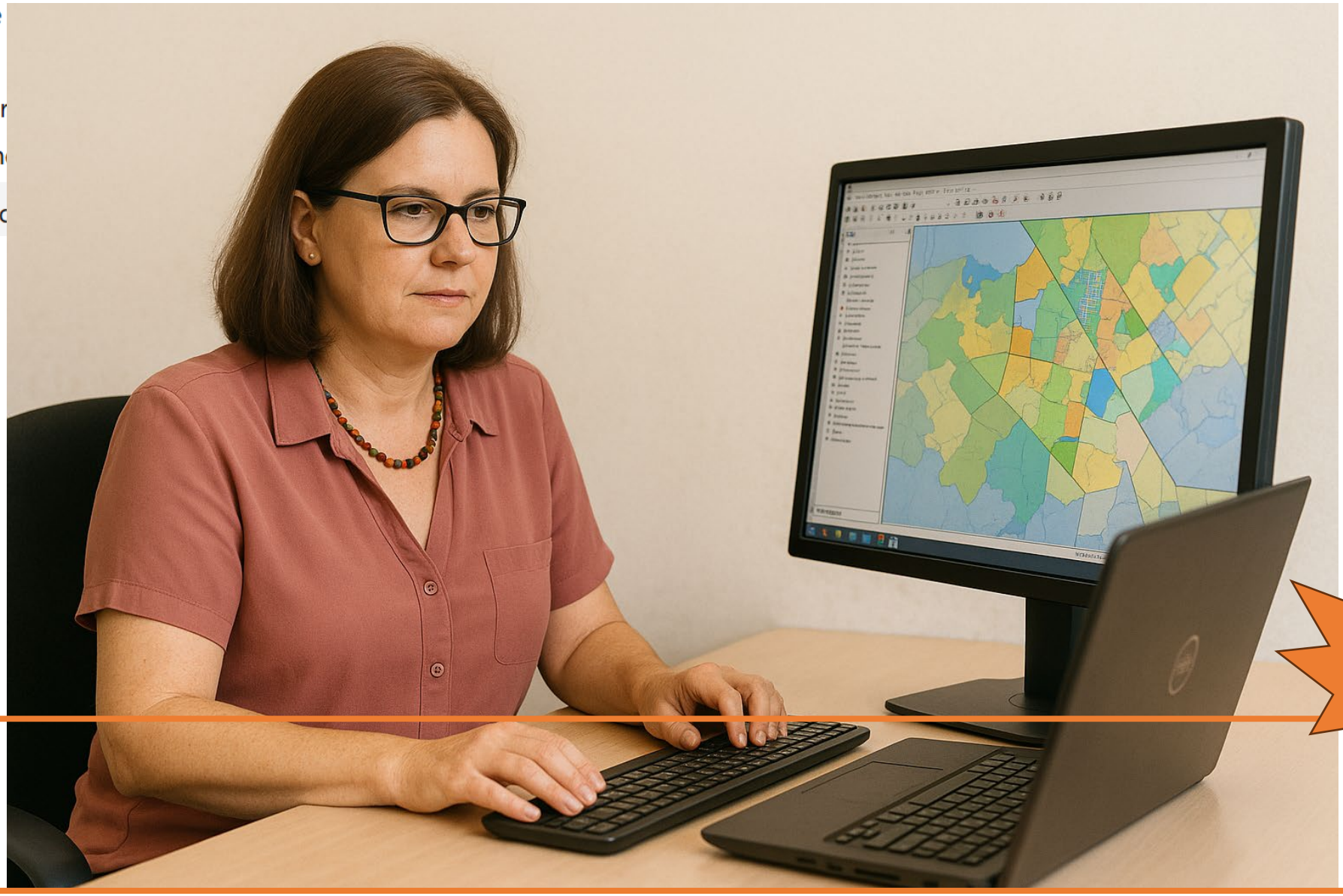
Could you make the person more realistic? A transgender question.

Could you make a similar image but on landscape

Sanet Carow working with a GIS

To create
upload a
of appear
just let m

Find a pho



Attention to detail!!


PETER SCHMITZ
9

What makes the GeoSpatial industry unique?

- GeoSpatial!
- A science ar
- Various app
- From variou

Let me ask C

All of the abov

- Multiple tech
- Scalability a
- Decision-ma
- Visual comm
- Rapid Grow

Characteristics of a Spatial Thinker

To function successfully in the industry, an individual should possess spatial thinking skills.

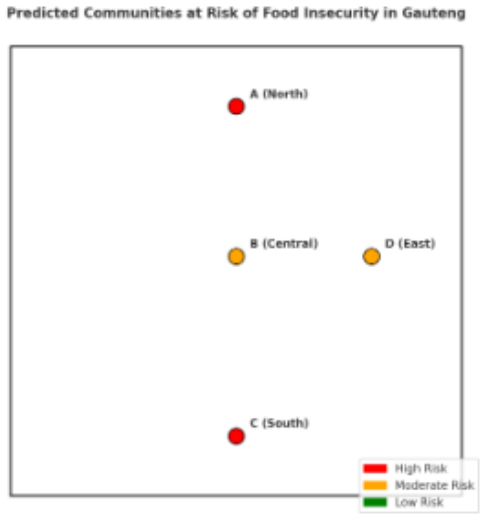
- A person with well-developed spatial thinking skills should be able to:
  - Use space to structure problems,
  - Identify data sets needed to solve a problem
  - Assess the quality of the data sets
  - model the real and theoretical world,
  - Identify and communicate possible solutions.
  - Use previously gained knowledge to solve problems in unfamiliar circumstances

Participants from a study to gauge the spatial thinking skills of people working in the GIS industry in SA demonstrated **superior spatial thinking skills**

Questions with a high spatiality?

Question	Spatiality
Choose the best description of food insecurity. a) A farm exposed to regular theft. b) Economic and social conditions limiting communities to have access to adequate food. c) A community feeling inadequate and uncertain. d) A community at risk of violence.	1

Looking at the four maps of Gauteng (unemployment, income below poverty line, low education, and location of fresh produce outlets), we can identify areas most at risk of food insecurity:



Here's the summary risk map of Gauteng communities:

- **A (North)** → High Risk
- **C (South)** → High Risk
- **B (Central)** → Moderate Risk
- **D (East)** → Moderate Risk

This visualization highlights **A and C as the most food-insecure areas** due to poverty, unemployment, and limited access to fresh produce outlets.

- **Area D (East Gauteng):**
  Mixed risk: some outlets available, but poverty and unemployment are significant.

✅ **Most at risk: Northern (A) and Southern (C) communities** of Gauteng, because they show a combination of high unemployment, high poverty, low education, and limited access to fresh produce outlets.

Questions with a high spatiality?

Question	Cell value
1. Which of the following is an example of a cultural landscape? a) A monument b) A city centre c) A natural environment d) Concert halls and schools	1

2. Compare the images and select the one that best depicts a cultural landscape.	11

a)

b)

c)

d)

(Images created using Microsoft Bind Image Creator)

Recommended plan for you

Personal | Business

Free

$0 USD / month

Intelligence for everyday tasks

Your current plan

- Access to GPT-5
- Limited file uploads

Plus

POPULAR

$20 USD / month

More access to advanced intelligence

Get Plus

- GPT-5 with advanced reasoning
- Expanded messaging and uploads

Pro

$200 USD / month

Full access to the best of ChatGPT

Get Pro

- GPT-5 with pro reasoning
- Unlimited messages and uploads

Questions with a high spatiality

Question	Cell value
1. Write short explanatory notes on each of the following: Table mountains Buttes	2

Table mountains

- Flat-topped mountains with steep sides, formed when a hard, resistant layer of rock (ofte… …tects softer layers beneath from erosion.
- Example: Table Mountain in Cape Town, South Africa.

Buttes

- Isolated, steep-sided hills with a flat top, smaller than mesas and plateaus.
- Formed by erosion, leaving behind a resistant caprock protecting the softer rock layers below.

Gaps

- Low points or openings between hills or mountains, often created by river erosion or tectonic activity.
- They serve as natural passageways or routes through mountain ranges (also called passes).

2. Interpret the contours on the maps below. Identify the landforms	24

(a) Table Mountain – Flat-topped mountain (Mesa)

Interpretation:

- The contours form a broad, flat upper surface with very steep sides.
- The elevation remains nearly constant across the top, indicating a plateau-like summit.
- This is typical of a **table mountain** or **mesa**.

Landform:

🟩 **Table Mountain (Flat-topped mountain)**

Side view (text sketch):

markdown Copy code

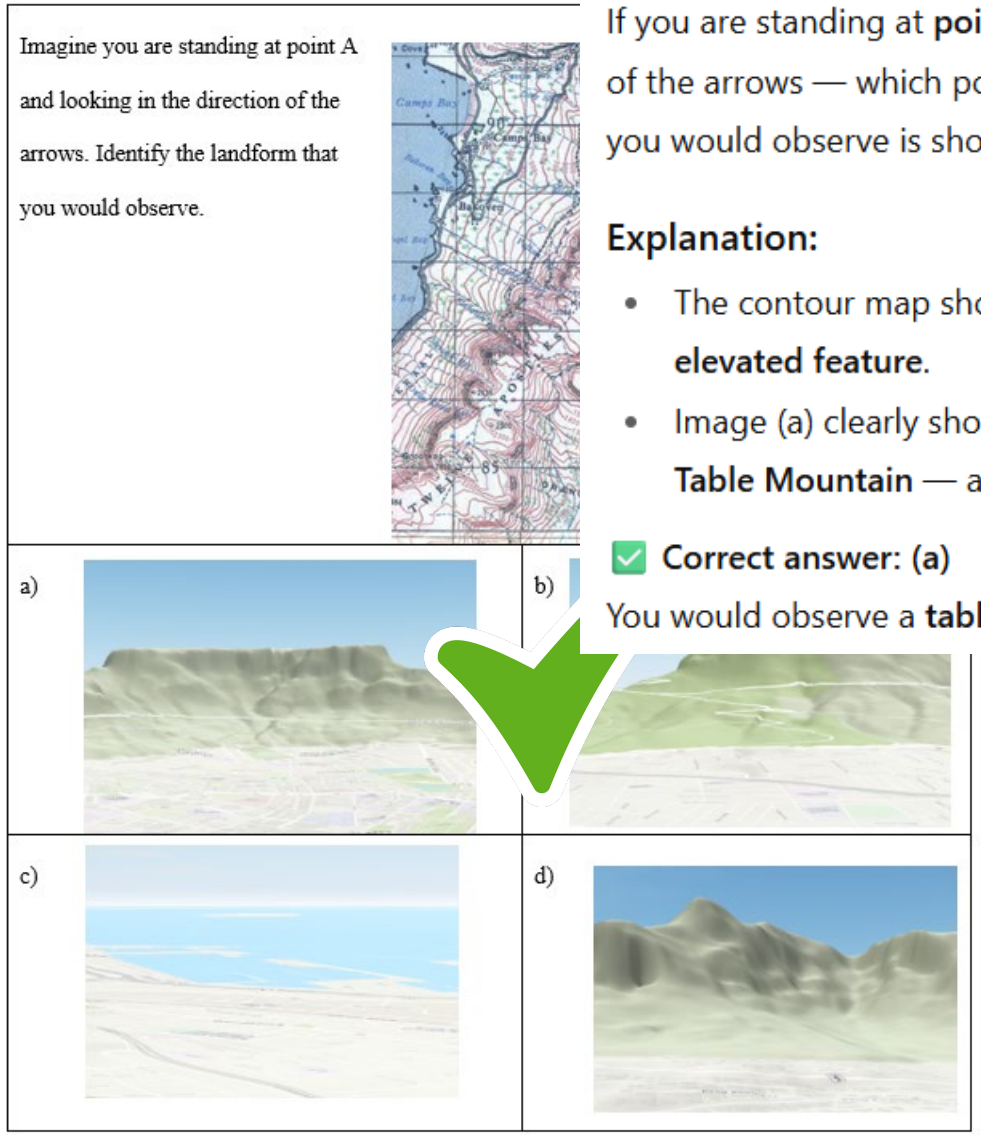
```
      _______
     /       \
____/         \____
```

Formation:

- Formed by **erosion** where a hard, resistant layer (often sandstone or lava) protects the softer underlying rocks from wearing away.
- Over time, surrounding softer material erodes, leaving a steep-sided, flat-topped mountain.

(Images from OpenStreetMap)

Questions with a high spatiality?



If you are standing at **point A** (on the topographic map of Table Mountain area) and looking in the direction of the arrows — which point **northwest toward the flat-topped section of Table Mountain** — the landform you would observe is shown in **image (a)**.

Explanation:

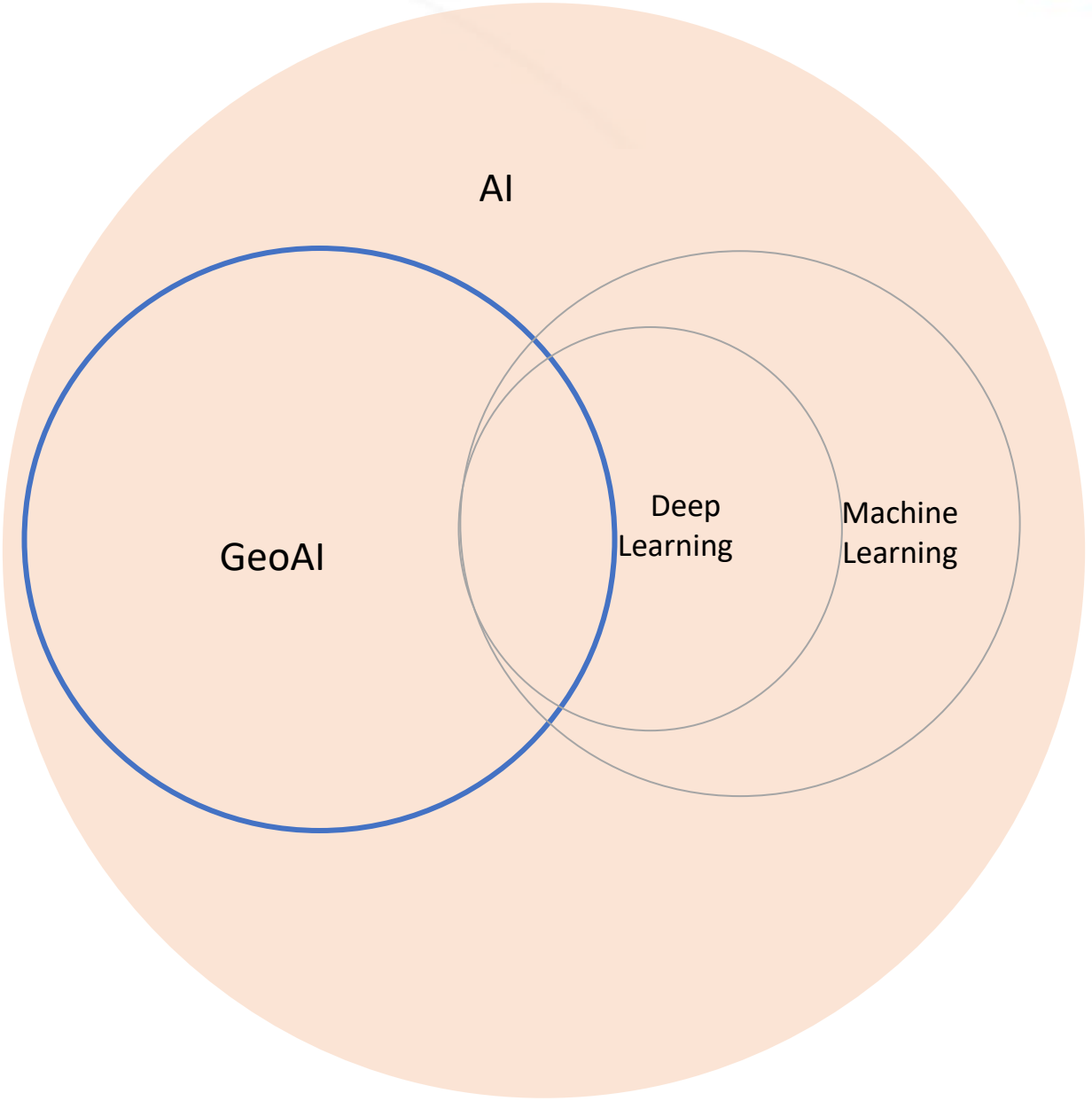
- The contour map shows **point A** located on the upper slopes, looking toward a broad, **flat-topped elevated feature**.
- Image (a) clearly shows a **flat-topped mountain with steep sides**, which matches the appearance of **Table Mountain** — a classic **table mountain landform**.

✅ **Correct answer: (a)**

You would observe a **table mountain** (flat-topped mountain).

GeoAI

- Geospatial data, science, and technology
- Real-world understanding
- Operations to run at scale
- Approachable spatial tools and algorithms



A turn to Naïve GIS?

- Naïve Geography - dates back to 1960's
- Not 'armchair science' or 'Mickey Mouse research', nor 'stupid Geography'.
- NOT FOR THE UNEDUCATED

- Egenhofer & Mark (1995)
  - *Naïve Geography is the body of knowledge that people have about the surrounding geographic world.*
  - How people think and reason about geographic space
  - Naïve: instinctive or spontaneous (Oxford dictionary – not stupid!)
  - Has to be formalized so that it can be implemented in computers.
  - To get a better understanding of environments – need to incorporate naïve geographic knowledge and reasoning into GISs
  - Today's (1995) GISs do not support common-sense reasoning
  - Should incorporate tools to mimic human thinking (AI)
  - Outcomes should make intuitive sense and need little explanation
- Make the use of GISSs accessible to all

Conclusion - **Threat, Tool or Teammate?**

- Naïve GIS – for the educated/professional
- We have to move beyond AI

- Thread - Distinguish between the use of AI by the uneducated and the educated or professional.
  - Difference in quality of output
  - Quality of outputs may reduce
  - 4IR ⟶ 5IR: **SUSTAINABILITY AND ETHICAL USE!**

- Tool and Teammate - Answers in GIS are still not final.
  - More accessible GISs – Professional vs uneducated

- It boils down to RESPONSIBILITY
  - Professional signature as a registered person!