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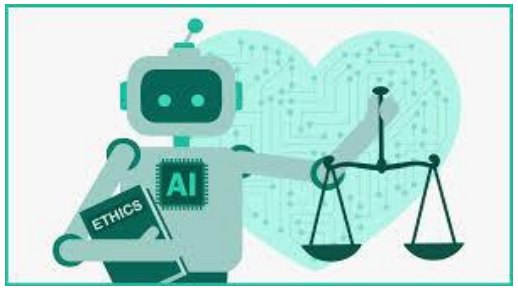

WEEK 8
AI Ethics, Bias, Privacy & Academic Integrity

3RD GRADE IT STUDENTS – IT DEPARTMENT

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1. Introduction to AI Ethics

Artificial Intelligence is increasingly integrated into social, educational, economic, and governmental systems.

Ethical challenges arise because AI systems:

- make predictions that influence real people
- operate on large datasets containing hidden bias
- automate decisions without transparency
- can be misused for surveillance, manipulation, or academic misconduct

Ethics ensures that AI is **fair, responsible, transparent, and safe**.

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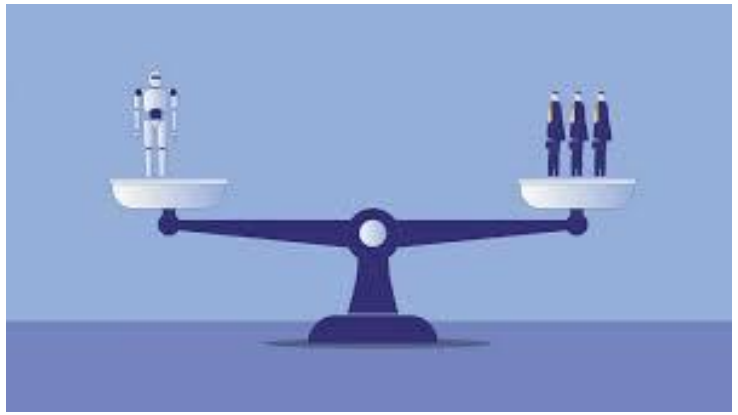
2. The Foundations of AI Ethics

2.1 Transparency

Users should understand:

- how a model was trained
- what data it uses
- its limitations and risks



2.2 Accountability

Developers and users must remain responsible for AI decisions.
AI cannot be blamed for errors; humans must interpret and validate outputs.

2.3 Fairness

AI must avoid discrimination against:

- gender
- ethnicity
- language background
- socioeconomic status
- disability

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3. Understanding Bias in AI Systems

3.1 Data Bias

- Occurs when the training data does not represent the real-world population.

Examples:

- Image datasets dominated by lighter-skinned subjects → poor performance on darker skin tones
- Chatbots trained mostly on Western texts → weaker responses for non-Western contexts

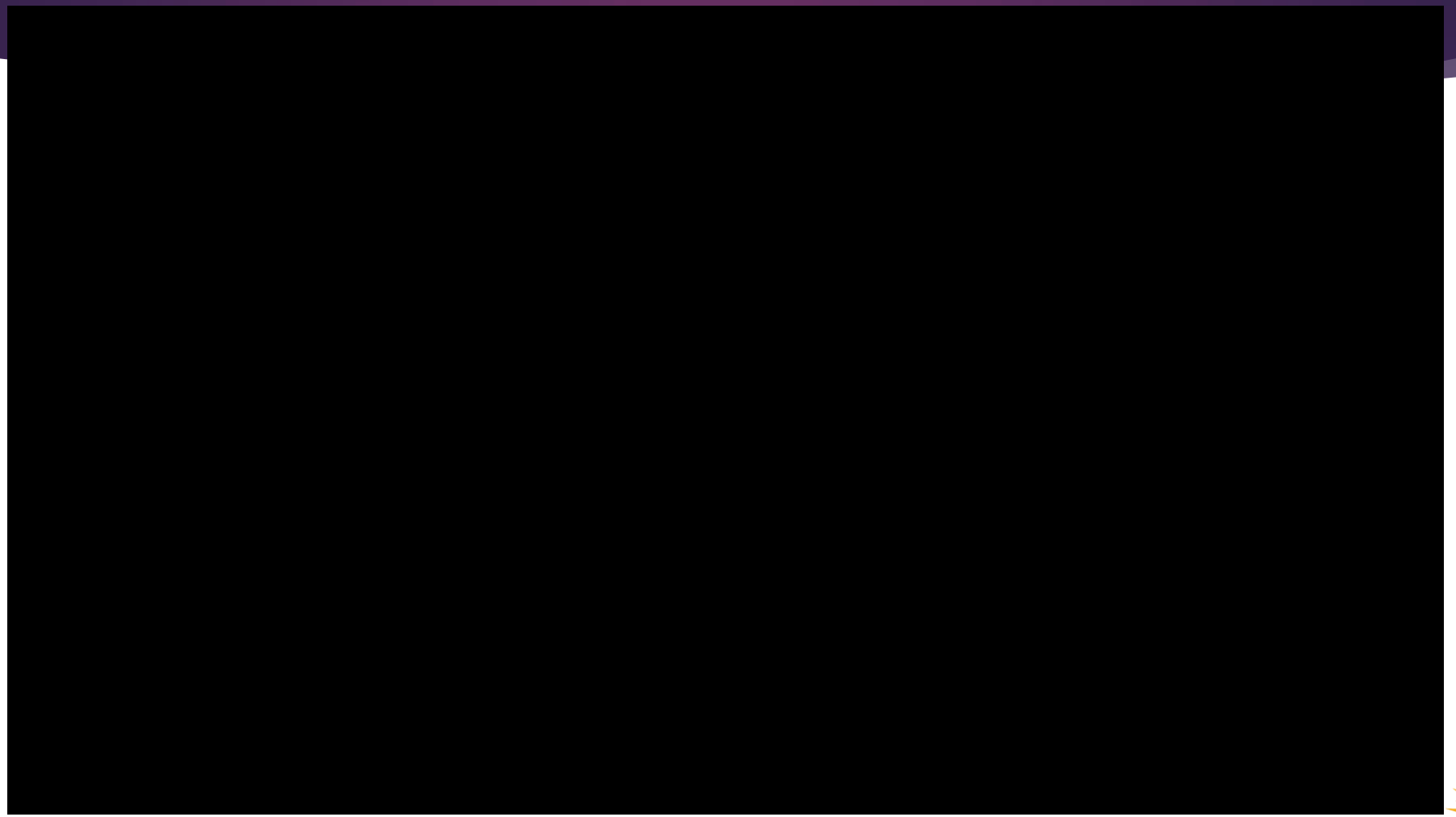
3.2 Algorithmic Bias

- Even with clean data, algorithms may amplify statistical patterns.

3.3 User-Generated Bias

- Prompts written with stereotypes produce biased outputs.

Data or Ai Bias!



4. Consequences of AI Bias

4.1 Social Impact

- Exclusion of minority groups
- Reinforcement of stereotypes(**Example:** If AI-generated images consistently show doctors as men and nurses as women, this reinforces gender stereotypes in healthcare professions, potentially influencing career choices and hiring decisions.)
- Unfair hiring or lending practices

4.2 Technical Impact

- Lower model accuracy
- Generalization failures
- Untrustworthy AI outputs

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5. Privacy & Security Concerns

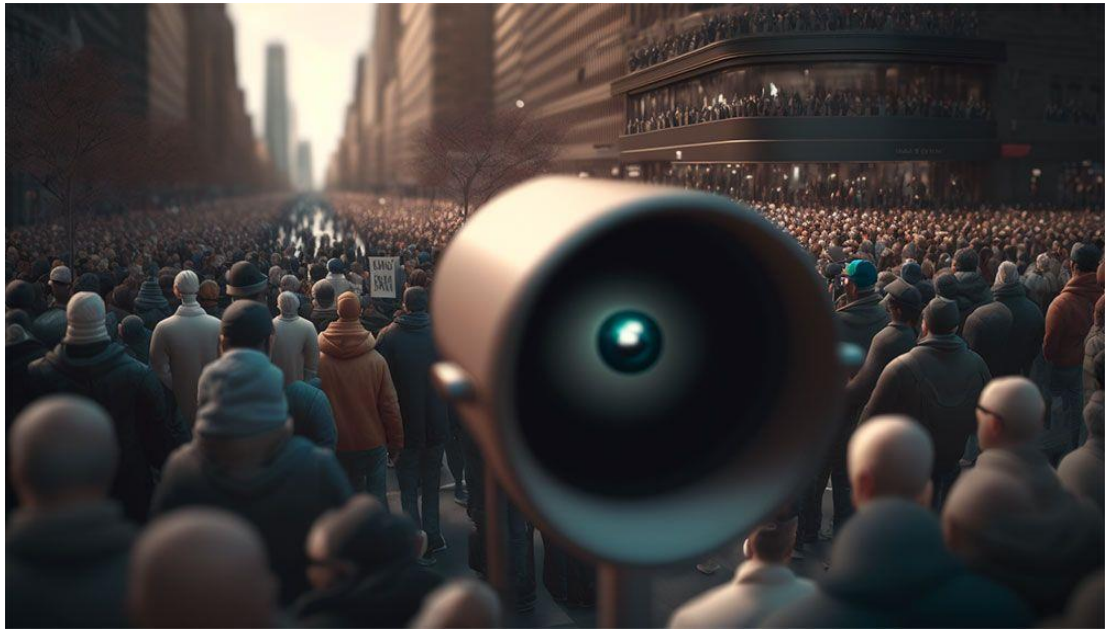
AI tools sometimes store user input for model improvement.

Risks:

- Exposure of personal information
- Leakage of company data
- Misuse of uploaded files
- Unintended training on sensitive content

Never upload:

- passwords
- student data or grades
- API keys
- internal documents
- unpublished research



6. Deepfakes & Misinformation

Generative AI can produce:

- hyper-realistic fake audio
- manipulated political videos
- fabricated news articles

Students must learn detection strategies:

- reverse-image search
- metadata inspection
- verifying via multiple sources

7. Ethical Use of AI in Education

Allowed Uses:

- summarizing readings
- generating study notes
- checking grammar
- asking conceptual questions
- brainstorming ideas

Not Allowed (Academic Dishonesty):

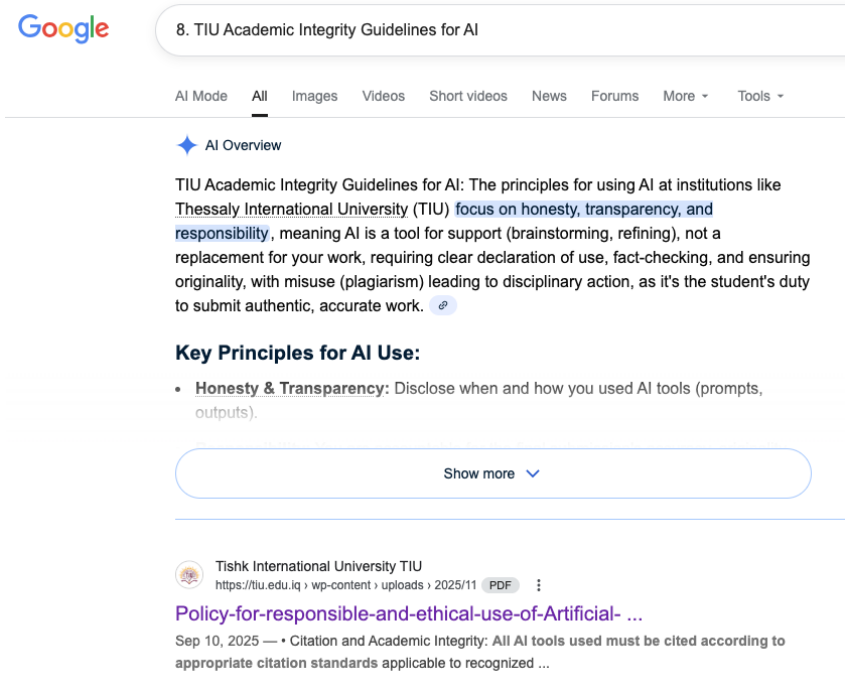
- using AI to write full assignments
- generating entire reports
- solving homework without understanding
- copying AI-generated code into exams
- hiding AI assistance

Students must cite AI tools when used.

8. TIU Academic Integrity Guidelines for AI

Students must:

- use AI as a support, not as a substitute
- disclose AI assistance in their work
- write their own explanations and code
- avoid submitting AI content as original work



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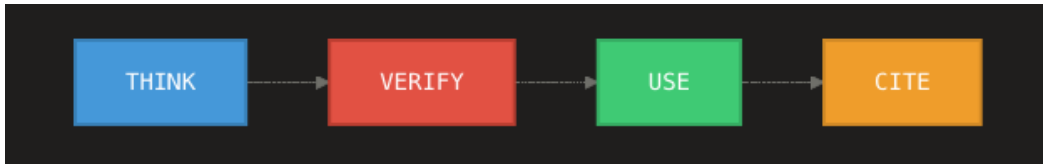
9. Responsible AI Framework

A simple model for you as students:

Think → Verify → Use → Cite



- **Think**: Understand the problem before prompting
- **Verify**: Cross-check AI output
- **Use**: Apply AI ethically and safely
- **Cite**: Acknowledge AI's contribution

Revision Quiz

Q1. What is the main purpose of AI ethics?

A. To make AI faster
B. To ensure AI is used safely, fairly, and responsibly
C. To reduce programming time
D. To remove humans from decision-making

Q2. Which of the following is an example of *data bias*?

A. The model explains errors
B. The model is trained on incomplete or unbalanced datasets
C. The user writes a long prompt
D. The AI server is slow

Q3. Which of the following should *never* be uploaded to AI tools?

A. A general math question
B. Public website links
C. Passwords or internal student records
D. Short summaries of articles

Q4. Using AI to generate an entire assignment and submitting it as your own is:

A. Allowed
B. Encouraged
C. Academic misconduct
D. Good practice

Q5. What is the correct order of the Responsible AI Use Cycle?

A. Use → Cite → Verify → Think
B. Think → Verify → Use → Cite
C. Cite → Use → Think → Verify
D. Think → Use → Forget

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Conclusion

- AI ethics ensures fairness, transparency, and accountability in intelligent systems.
- Bias arises from data, algorithms, and user prompts — and must be actively mitigated.
- Privacy protection is essential: sensitive information must never be shared with AI tools.
- Deepfakes and misinformation require critical thinking and verification skills.
- In academic settings, AI must support learning, not replace genuine student work.
- Responsible AI use follows the cycle: Think → Verify → Use → Cite.

References and more info ☺

UNESCO – Introduction to AI Ethics (Beginner-Friendly)

https://www.unesco.org/en/artificial-intelligence/ethics
Why it works: Official UN website, always available.
Why useful: Short explanations of fairness, transparency, and responsible AI.

IBM – Responsible AI Overview (Simple Explanation)

https://www.ibm.com/topics/responsible-ai
Why it works: IBM's permanent AI glossary.
Why useful: Short, readable definitions of ethics, accountability, bias.

Microsoft – Principles of Responsible AI

https://www.microsoft.com/en-us/ai/responsible-ai
Why it works: Microsoft official ethics page.
Why useful: Good diagrams + student-friendly explanations.

YouTube – "What is AI Bias?" by TED-Ed

https://www.youtube.com/watch?v=59bMh59JQDo
Why students love it: Visual, short, and memorable.

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