Which is Real?

Which is Real?

Identifying Synthetic Content

Lesson Objectives

- Identify AI-generated content effectively using specific detection techniques for images, text, and audio.

- Detecting Synthetic with the human eye alone is limited

- References:
  - Media Lab at MIT on Detecting Fakes
  - Detect Fakes with Kellogg's online tool
  - CISA Contextualizing Deepfake Threats to Organizations
  - DARPA: Deepfake Defense Tech Ready for Commercialization, Transition

Synthetic Check: Human Image

1. Context of the scene

2. Hands and limbs of people

3. Face and facial features

4. Clothes and items

Human Images

Human Images: Context

- Logic and Context of the Scene

Human Images: Hands and Limbs

- Pay Attention to the Hands and Fingers

Human Images: Face

- Pay Attention to the Face
    - Pay attention to the cheeks and forehead
    - Pay attention to the eyes and eyebrows
    - Pay attention to the glasses
    - Pay attention to facial hair
    - Pay attention to facial moles

Human Images: Clothing

- Pay attention to the clothes
  - Warped Items
  - Missing and Extra items
  - Perspective and Geometry
  - Repetition in Detail
  - Material Texture

Human Image Check

- ███████████████████
- ████████████████████████
- ██████████████████████
- █████████████████

Human Image Check

1. Context of the scene
2. Hands and limbs of people
3. Face and facial features
4. Clothes and items

Human Images: Check On Learning

- What do you notice?

Human Images: Check On Learning

- What do you notice?

Structure Image Check

1. Context of the scene
2. Structural Consistency
3. Material Texture
4. Lighting and Shadows
5. Perspective and Geometry
6. Repetition in Detail
7. Missing Elements
8. Nonsensical Object Placement
9. Disrupted Continuity
10. Anomalies in Common Patterns

Structure Image

- What do you notice?

Structure Image

1. Structural Consistency

2. Perspective and Geometry

3. Repetition in Detail

4. Nonsensical Object Placement

5. Anomalies in Common Patterns

Structure Image

1. Structural Consistency

2. Perspective and Geometry

3. Repetition in Detail

4. Nonsensical Object Placement

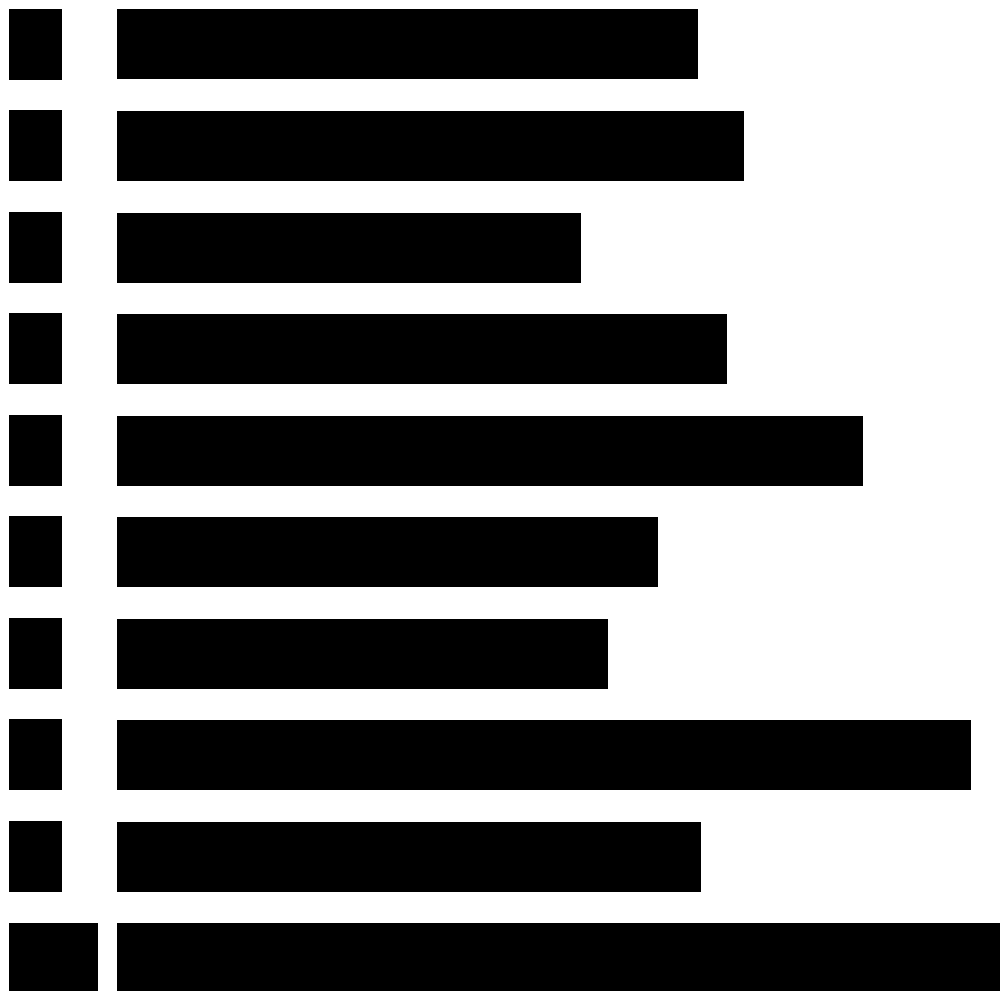5. Anomalies in Common Patterns

Structure Image

1. Structural Consistency

Structure Image: Check On Learning

Structure Image Check

1. Context of the scene
2. Structural Consistency
3. Material Texture
4. Lighting and Shadows
5. Perspective and Geometry
6. Repetition in Detail
7. Missing Elements
8. Nonsensical Object Placement
9. Disrupted Continuity
10. Anomalies in Common Patterns

Synthetic Video Check: Practical Exercise

1. Context of the scene

2. Structural Consistency

3. Material Texture

4. Continue with Techniques...

1. Search online for possible deepfake videos that have been in the news

2. Analyze the video

3. Determine your own TTP for detecting synthetic videos

4. Present TTPs

Why Does It Matter To You?

References

- 1. Media Lab at MIT on Detecting Fakes - https://www.media.mit.edu/projects/detect-fakes/overview/

- 2. Detect Fakes with Kellogg's online tool - https://detectfakes.kellogg.northwestern.edu/

- 3. CISA Contextualizing Deepfake Threats to Organizations - https://media.defense.gov/2023/Sep/12/2003298925/-1/-1/0/CSI-DEEPFAKE-THREATS.PDF

- 4. DARPA: Deepfake Defense Tech Ready for Commercialization, Transition - https://www.darpa.mil/news-events/2024-03-14#:~:text=Through%20the%20Semantic%20Forensics%20

TAKE A BREAK

Return By: XX:XX