

Putting AI to Work

11

Verifying Accuracy

Learning Objectives

- Evaluate AI-generated claims about past events, people, and dates by cross-checking with reliable sources
- Recognize the limitations of AI in real-time updates and verify time-sensitive claims using trustworthy, up-to-date information
- Analyze AI-generated statistics, measurements, and calculations to determine accuracy and logical consistency
- Identify and apply reputable sources to confirm or dispute AI-generated content

Module 11.1: Verifying Historical Facts

- AI generates historical information by predicting patterns, not by "knowing" facts.
- Common errors include incorrect dates, misattributed quotes, and confused events or people.
- Verification process:
 - Identify key facts.
 - Cross-reference reputable sources.
 - Use fact-checking techniques.
- AI may cite sources that sound real but don't actually exist (hallucinated sources).
- Always verify specific elements: names, dates, quotes, titles, locations, and sequences of events.

Module 11.1: Ethics in Action

- Incorrect historical information can distort public understanding and erase important perspectives.
- Misinformation about civil rights, conflict, or injustice has serious consequences.
- Ethical AI use requires verification before sharing, especially for history and cultural memory.

Module 11.1: Techie Dive

- AI doesn't "know" facts; it predicts what words typically follow others based on training data.
- Hallucination occurs when AI invents fake book titles, misattributes quotes, or creates false information.
- Pattern prediction explains why AI confidently provides incorrect dates or facts.
- Data sparsity or contradictory training data increases the likelihood of fabricated details.

Module 11.1: Business Lens

- Businesses must ensure historical accuracy in marketing, training, and public statements.
- Incorrect quotes, fictional sources, or wrong dates damage credibility and trust.
- Fact-checking through reputable sources is essential before publishing or sharing.
- Applications include company bios, educational content, and brand storytelling.

Module 11.2: Verifying Current Events

- AI tools are often trained on data that lags behind real-world events.
- Knowledge cutoff dates determine the most recent information AI was trained on.
- A confident AI tone does not equal current or accurate knowledge.
- Common pitfalls:
 - Assuming the AI is up to date
 - Using AI to confirm AI
 - Relying on hallucinated sources
- Cross-check with trusted, timely sources like AP, BBC, Reuters, WHO, or NASA.

Module 11.2: Ethics in Action

- Spreading misinformation about recent events can damage reputations or cause harm.
- Verification before sharing AI-generated summaries is an ethical responsibility.
- This is especially critical during crises or elections, when accurate information is essential.

Module 11.2: Techie Dive

- AI models like GPT-4 have knowledge cutoff dates that limit their current information.
- Some tools access live web results, but their accuracy depends on the sources surfaced.
- Tools that summarize content without showing the original sources reduce transparency.
- Understanding model capabilities helps set appropriate expectations.

Module 11.2: Business Lens

- Professionals risk public embarrassment and regulatory fines if current facts aren't verified.
- Publishing outdated or incorrect information results in a loss of customer trust.
- Build processes that include a final human fact-check for time-sensitive claims.
- AI assistance doesn't replace verification responsibility.

Module 11.3: Verifying Numerical Data

- AI-generated numbers require two layers of verification:
 - Math accuracy
 - Source reliability
- AI models are language predictors, not calculators or databases.
- Common errors:
 - Miscalculated percentages
 - Confused units
 - Hallucinated statistics
- Verification steps:
 - Assess if the numbers make sense.
 - Redo the calculations.
 - Find real-world sources.
- Be cautious with projections and estimates, as these are often guesses, not facts.

Module 11.3: Ethics in Action

- Misleading math has real consequences in the fields of healthcare, finance, and education.
- Faulty statistics can lead to incorrect diagnoses or unfair resource allocation.
- Double-checking AI-generated numbers before using or publishing them is essential to prevent harm.

Module 11.3: Techie Dive

- Most AI models generate answers based on text patterns, not actual computation.
- The way an AI tool is designed (its architecture) means the AI may miscalculate, confuse units, or hallucinate statistics.
- Tools with built-in calculators reduce but don't eliminate errors.
- Human verification remains essential regardless of a tool's capabilities.

Module 11.3: Business Lens

- Numbers build trust in business communication only when they're correct.
- Incorrect figures in proposals or marketing campaigns damage credibility.
- Cross-checking figures before professional use is a non-negotiable best practice.
- Specific data makes messages persuasive, which increasing the risk if the statistics are wrong.

Module 11.4: Using Reliable Sources

- Reliable sources are credible, accurate, current, and unbiased.
- Examples:
 - Academic publications
 - Government websites (.gov)
 - Peer-reviewed journals
 - Major news organizations
- AI citations may be hallucinated; the titles may sound real, but the sources don't exist.
- Evaluation criteria:
 - Publisher reputation
 - Author expertise
 - Publication date
- Always independently verify AI-provided citations by searching titles and clicking links.

Module 11.4: Ethics in Action

- In healthcare, finance, legal work, and journalism, publishing unsourced claims can lead to real harm.
- The consequences include financial losses, legal issues, and a loss of public trust.
- Fact-checking using reliable sources is an ethical obligation, not just good practice.

Module 11.4: Techie Dive

- AI tools don't "know" which websites are credible; they mimic patterns from training data.
- Fabricated citations can sound legitimate because of text-pattern generation.
- Newer AI tools attempt to include sources, but many still generate fake citations.
- Independent verification is necessary because AI cannot evaluate source credibility.

Module 11.4: Business Lens

- Faulty information leads to bad decisions, lost revenue, and a damaged reputation.
- Companies must back claims with evidence from trustworthy sources.
- Using AI doesn't replace the need for real fact-checking in business contexts.
- Credibility depends on accurate, well-sourced information.

Key Takeaways

- AI can sound confident while providing incorrect information, so always verify claims.
- Historical facts require cross-referencing with academic and government sources.
- Current-events verification requires checking knowledge cutoffs and using trusted news sources.
- Numerical data needs two-layer verification:
 - Mathematical accuracy
 - Source reliability
- AI-cited sources may be hallucinated, so always independently verify citations exist.
- Reliable sources include *.edu* sites, *.gov* sites, peer-reviewed journals, and established news organizations.
- Ethical AI use requires systematic fact-checking, especially in high-stakes contexts.
- Building verification habits protects credibility, prevents harm, and ensures responsible AI use.