# בין תיאוריה למעשה, הכנה לאתגרי עולם המחשוב

**Final Project Brief – Misinformation Detection Using AI**

**Project Title**

TruthLens: An AI-Powered Misinformation Detection Tool for Social Media

**Overview**

In this project, you will build a software tool (web app or browser extension) that analyzes and flags potentially misleading or biased information in social media content (e.g., tweets, headlines, posts). You will use AI tools like ChatGPT, Perplexity, and summarization/fact-checking APIs to assess textual content, highlight red flags, and assist users in evaluating truthfulness.

This project emphasizes 21st-century skills including:

* Critical thinking & digital literacy
* Problem-solving in ambiguous environments
* Ethical use of AI
* Collaboration and reflective thinking

**Objectives**

By the end of the project, you will:

1. Design and implement a working prototype that:
   * Accepts a piece of short-form content (tweet, post, headline)
   * Uses AI to analyze the content
   * Flags misinformation, bias, or lack of verifiable sources
2. Critically evaluate how AI contributes to or detracts from truth detection
3. Identify and reflect on cognitive biases and fallacies that occurred during the project
4. Document your decision-making process, ethical considerations, and lessons learned

**Deliverables**

1. Working Software Prototype
   * Can be a browser extension, web app, or command-line tool
   * Should show analysis output in a user-friendly format
   * Uses at least one AI tool or API meaningfully (e.g., ChatGPT, Perplexity, ClaimReview DB, or custom LLMs)
2. Reflective Report (5–8 pages)
   * Overview of the system’s purpose, design choices, and architecture
   * Your learning journey:
     + including your previous knowledge and what are the AI resources for example prompts you used and the resources (YouTube, Tutorials, installations, …) that you used for your learning. Assume that a new student/employee will use this document to do the same next year.
   * Description of how AI was used and its limitations (including the prompts used)
   * Key decisions, problems encountered, and how they were resolved
   * Discussion of at least three cognitive biases or fallacies you identified (e.g., confirmation bias, recency bias, framing effect)
   * Ethical implications of labeling something as “misinformation”
   * Suggestions for future improvements
   * For Pair submissions: What each one did and how you worked together/

**Guidelines**

* You must use AI tools extensively, but critically (e.g., prompt engineering, testing outputs for hallucination, and evaluating response consistency)
* You are encouraged to test your tool on real-world public data (e.g., political tweets, trending news headlines)
* Think beyond technical challenges — communication, ethics, and user trust are central themes
* **You may work in pairs**

**Tools & Technologies (Suggested)**

* Frontend: React.js, Bootstrap, HTML/CSS
* Backend: Flask, Node.js, or similar
* AI APIs: OpenAI GPT, Perplexity, Cohere, HuggingFace Transformers
* External Sources: Google Fact Check API, Wikipedia, News APIs
* Version Control: Git + GitHub (required)

**Assessment Criteria**

| **Criterion** | **Weight** |
| --- | --- |
| Technical correctness & functionality (Effective use and evaluation of AI tools) | 40% |
| Depth of critical thinking & reflection including fallacies and biases encounterd | 40% |
| Presentation & clarity of documentation | 20% |

**Instructor’s Notes**

This is not just a technical challenge. You are being asked to challenge your assumptions, work with imperfect AI tools, and think deeply about how we judge truth in an AI-powered world.

Submission: You need to put your code and link to the video on GitHub and then submit the document explaining your journey (the link to your GitHub should be inside that document)