

Assignment 2 – Artificial Intelligence Tools

Topic: AI Bias & Fairness — Testing Bias in AI Career Suggestions

Creators: Shaima Nigem, Selen Mahajna

1) Task (What we did)

We tested whether AI tools produce biased or stereotype-driven outputs when describing professions and suggesting careers. We compared ChatGPT and Google Gemini using the same prompts and checked whether bias-reducing constraints improve fairness and diversity.

2) Tools (and why we chose them)

ChatGPT (LLM):

- Ease of use: fast drafting and clear structure suggestions.
- Technology: a Large Language Model that generates text from prompts.
- Reliability: useful for ideas, but outputs may vary → requires human review.

Google Gemini (LLM):

- Ease of use: quick alternatives and shorter rewordings.
- Technology: an LLM that generates responses based on learned patterns.
- Reliability: good for comparison, but still needs verification and editing.

3) Method (Process)

We ran three experiments (Engineer, Doctor, Caring jobs) with two prompt versions:

- Prompt A (general): same question with no constraints.
- Prompt B (bias-reducing): added constraints (gender-neutral language, avoid stereotypes, balanced across fields).
- We compared ChatGPT vs Gemini outputs and noted bias patterns (stereotypes, narrow role clustering).

4) Final Output (Website)

A one-page website presenting the experiments, screenshots as evidence, and the comparison results. If we had more time, we would test more traits/roles and repeat each prompt multiple times for consistency.

5) Reflection

- Did we enjoy it? Yes, because it showed how prompt wording changes fairness and diversity.
- Advantages: fast to reproduce, easy to compare tools, clear impact of prompt design.
- Challenges/limitations: outputs vary between runs; bias evaluation is qualitative; careful prompt design is needed.