Data Science 1 - HW 1

Date: August 29, 2025

AI Hallucination Cases

1) What is the dataset?

AI Hallucination Cases

I found this dataset in the 2025.07.16 edition of "Data is Plural". This selection looks at "legal decisions in cases where generative AI produced hallucinated content - typically fake citations, but also other types of arguments." I find adoption of AI to be a crucial topic in all settings - professional, educational, etc. However, I found this dataset to be exceptionally interesting given that legal proceedings are typically environments of rigorous preparation. In infiltrating this environment, it really gets at the heart of the idea that AI might be reducing the quality of human thought and work.

2) Outside of the dataset

File Structure:

- Single file dataset: `Charlotin-hallucination_cases.csv`
- No compression applied
- No copyright information provided
- Standalone file with no accompanying documentation files

File Format & Size:

- **Format:** CSV (Comma-Separated Values)
- **File size:** 293.8 KB
- **Data dimensions:** 309 rows × 14 columns

3) Loading the dataset

I downloaded the CSV and moved it into the appropriate folder and used `read_csv` provided by the pandas library.

```
df = pd.read_csv('./Charlotin-hallucination_cases.csv')
```

4) Inside the dataset

The dataset contains 309 rows and 14 columns. In the table below, we describe variables and observations. I added a description column since there was no documentation.

Variable	Description	Observations
Case Name	The legal case identifier	307 unique observations, which is expected as the only repetition that occurs is in an effort to anonymize data ex: Giacomino y Otros v. Montserrat y Otros Rosario CA
Court	The court where the case was heard	198 Unique observations ex: Rosario CA

Variable	Description	Observations
State(s)	Geographic jurisdiction	18 Unique observations ex: Argentina
Date	When the case occurred	Formatted YYYY-MM-DD ex: 2023-07-19
Party(ies)	Who was involved (Lawyer, Pro Se Litigant, etc.)	10 Unique observations ex: Lawyer, Pro Se Litigant
AI Tool	Which AI system was used (ChatGPT, Claude AI, etc.)	41 unique observations - some rows contained multiple tools. Also "implied" and "unidentified" were options.
Hallucination	Type of AI error (fabricated citations, false quotes, etc.)	199 unique observations with "Fabricated citation(s)" being the most frequent
Outcome	Court's decision	208 unique observations ranging from "Warning" as most frequent at 74 occurrences to Monetary Sanctions
Monetary Penalty	Financial consequences	39 unique observations with units varying depending on location
Professional Sanction	Professional disciplinary actions	Yes or no observations
Key Principle	Legal principle established	58 unique observations ex: Use of AI does not excuse failure to verify; attorneys must personally check all citations under Rule 11 and professional conduct rules
Pointer	Reference to specific legal authority	7 unique observations ex: Natural & Artificial Intelligence in Law
Source	Source document	281 ex: /documents/722/G.C.A._Y_OTROS_c._M.F.D_Y_OTROS_Argentina_August_2025.pdf
Details	Detailed description of the case	215 unique observations ex: The case at bar epitomizes the concern. Inordinate judicial resources were expended on reviewing cases cited by Plaintiff that did not exist. No doubt Plaintiff’s opponent in this litigation was forced to expend similar energies. Here, too, as noted, certain cases Plaintiff cited in support of her arguments stood for the opposite result from that which Plaintiff stated in her briefs. This kind of activity not only wastes precious and limited judicial resources, but it also drives up the cost of litigation unnecessarily for those who must defend against or seek to prosecute claims on behalf of paying clients, given the underpinnings of the American Rule that attaches to most civil litigation in this country.

Is the data tidy? I would say no. For instance, the Monetary Penalty column could have been handled better. It combines the amount and currency - violating the principle of multiple variables are stored in one column.

5) Questions

Questions I think this dataset could at least begin to answer are as follows:

- What countries are seeing the most cases?
- What countries have seen the highest monetary penalties?

Related to questions above, it would be interesting to see if the rate of cases is substantially higher when English is not the language used in interacting with the model, but this would require more information.