SeeGULL

(Stereotype Generation Using LLMs)
This doc: go/seegull-datacard
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This dataset was created as part of the SeeGULL (go/seegull-slides) project. It consists of tuples of the form (identity term, attribute) along with human annotations about whether the terms in the tuple are stereotypically associated.
This dataset has been created to aid evaluations of models for stereotypes with a very broad coverage over 179 identity groups spanning 6 continents, 8 different regions, 178 countries, 50 US states, and 31 Indian states and union territories.

Data Card

DATASET TEAM(S)

Technology and Society Collective (TaSC), RAI-HCT
Google Research India - NLU team

DATASET CONTACT

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PRIMARY DATA MODALITY

Image Data
Text Data
Tabular Data
Audio Data
Video Data
Time Series
Graph Data
Geospatial Data
Multimodal (Please specify)
Others (please specify)
Unknown

DATASET SNAPSHOT

Size of dataset

Number of Instances	11333
Number of Fields	6
Field 1. Identity term	Identity term for the tuple
Field 2. Token	Attribute token of the tuple
Field 3. Stereotypical (NA)	Number of annotators from North America that labeled the attribute token to be considered stereotypically associated with the identity term in the society.
Field 4. Non Stereotypical (NA)	Number of annotators from North America that labeled the attribute token to not be considered stereotypically associated with the identity term in the society.
Field 5. Not sure (NA)	Number of annotators from North America unaware or unsure of any such association between the identity term and token

DESCRIPTION OF CONTENT

The dataset contains tuples of the form (identity term, attribute) (for eg: (Indian, brown).

These tuples are annotated by human-raters. The annotators were asked to label whether the attribute token is associated with the identity term as stereotypical in the society.

The tuples were generated using few-shot prompting with LLMs PaLM and GPT-3, wherein they were given stereotype tuples from known, published resources as input.

Along with the tuples, for the most prevalent attribute terms in the dataset, we provide a score for offensiveness. This score is collected with human annotation on a likert scale of how offensive each attribute is.

	Field 6. Stereotypical (Region)	Number of annotators from the respective region (Europe, Latin America, South Asia, East Asia, Sub Saharan Africa, Middle East, North America, and Australia) that labeled the attribute token to be considered stereotypically associated with the identity term in the society.
	Field 7. Non Stereotypical (Region)	Number of annotators from the respective region that labeled the attribute token to not be considered stereotypically associated with the identity term in the society.
	Field 8. Not sure (Region)	Number of annotators from the respective region unaware or unsure of any such association between the identity term and token
	Field 9-12. Attribute Term: Offensive Score	Annotation on offensiveness of attribute term on a Likert scale

DATASET SUBJECT

Sensitive Data about people

Non-Sensitive Data about people

Data about natural phenomena

Data about places and objects

Synthetically generated data

Data about systems or products and their behaviors

Unknown

Others*

(*Data about social phenomena)

EXAMPLE: DATA POINT

This example is an actual data point from the data. As suggested by the heading of each column, the first column is the identity term, the second column is the attribute token, and columns 3 and 4 indicate the number of annotators that found the tuple to be Stereotypical and Non stereotypical. Column 5 indicates the number of annotators unsure about any such association. Column 6 indicates total number of annotations; derivable as a sum of columns 3-5.

E.g. of Data Point:

Identity term	Token	Stereotypical	Non Stereotypical	Not sure	Attribute Term: Offensive Score
Indian	Brown				

DATA FIELDS

- ***Field 1***. Identity term
  - Identity term for the tuple in consideration
- ***Field 2***. Token
  - Attribute token for the tuple under consideration
- ***Field 3***. Stereotypical (NA)
  - Number of annotators that labeled the attribute token to be considered stereotypically associated with the identity term in the society.
- ***Field 4***. Non Stereotypical (NA)
  - Number of annotators that labeled the attribute token to not be considered stereotypically associated with the identity term in the society.
- ***Field 5.*** Not sure (NA)
  - Number of annotators unaware or unsure of any such association between the identity term and token
- ***Field 6***. Stereotypical (Region)

		○ Number of annotators that labeled the attribute token to be considered stereotypically associated with the identity term in the society. • ***Field 7***. Non Stereotypical (Region) ○ Number of annotators that labeled the attribute token to not be considered stereotypically associated with the identity term in the society. • ***Field 8.*** Not sure (Region) ○ Number of annotators unaware or unsure of any such association between the identity term and token • ***Field 9-12.*** Attribute Term Offensive Scores ○ Annotation on offensiveness of attribute term on a Likert scale
DATASET PURPOSE(S)	KEY DOMAINS OR APPLICATION(S)	PRIMARY MOTIVATION(S)
Monitoring **Research** Production Others (please specify)	Domains Natural Language Processing, Algorithmic Fairness Problem Space Bias demonstration in NLP models and data	This dataset is created to be a repository of stereotypes with broad coverage of regions across the globe. Datasets like these are instrumental to
DATASET USAGE	INTENDED AND/OR SUITABLE USE CASE(S)	UNSUITABLE USE CASE(S)
Safe for production use **Safe for research use** Conditional use- some unsafe applications Only approved use Others (please specify)	• To demonstrate existence of bias i.e prevalence of stereotypes or fairness issues in NLP models and data	1. As a benchmark for assessing fairness or ensuring lack of fairness 2. As a resource for any bias mitigation in production systems 3. To train demographic predictors using lists of proxy identity terms obtained from wikipedia with their prototypical associations
SAFETY OF USE WITH OTHER DATA	ACCEPTABLE TRANSFORMATIONS	BEST PRACTICES FOR JOINING OR AGGREGATING WITH DATASET
Safe to use with other data Conditionally safe to use with other data Should not be used with other data Unknown Others* (Please specify)	**Joining with other datasets** **Subsampling and splitting** **Filtering** **Joining input sources** **Cleaning missing values** **Anomaly detection** **Grouping and summarizing** **Scaling and reducing** **Statistical transformations** **Redaction or Anonymization**	N/A (we have not attempted to use this dataset with other datasets, but we do not anticipate any issues)

	Others (please specify)	

VERSION STATUS	DATASET VERSION	MAINTENANCE PLAN
Regularly Updated New versions of the dataset have been or will continue to be made available. Actively Maintained No new versions will be made available, but this dataset will be actively maintained, including but not limited to updates to the data. Limited Maintenance The data will not be updated, but any technical issues will be addressed. Deprecated This dataset is obsolete or is no longer being maintained.	**Current Version** 1.0 **Last Updated** 05/2023 **Release Date** 05/2023	• We might add annotations for more tuples and attributes. • We will address any issues that people might face in the dataset usage.

ACCESS POLICY	RETENTION POLICY	WIPEOUT POLICY
The data will be accessible under the Apache License 2.0	N/A	N/A

DATA COLLECTION METHODS	DATA SOURCES	DATA COLLECTION

API
Artificially Generated
Crowdsourced - Paid
Crowdsourced - Volunteer
Vendor Collection Efforts
Scraped or Crawled
Survey, forms or polls
Taken from other existing datasets
Unknown
To be determined
Others (please specify)

Tuples for annotation: Generated using seed tuples from existing resources.

Date of Collection: Oct 2022 - Dec 2022
Data Modality: Text Data
Process:

- Attribute tokens were obtained from previous literature and datasets, such as papers including: Bhatt et al 2022, Borude et al, Nangia et al., 2020, Nadeem et al., 2020.
- Identity terms wrt demonyms were obtained from Wikipedia.

Annotations: Crowdsourced - Paid

Crowd Data Platform: Crowd Data Platform is a general HCOMP platform for all Google machine learning projects. It facilitates support of human computation, enabling the collection, storage and management of large-scale human-generated or human-augmented datasets used by teams in Google and Alphabet working on machine learning (ML) or other data-intensive products and services.
Date of Collection: Oct 2022 - Dec 2022
Instrumentation: CrowdCompute
Data Modality: Text Data

Tuples for annotation: Taken from existing datasets

Collected and included

- Identity_term: Identity term of the tuple in question
- Token: Attribute token of the tuple

Annotations: Crowdsourced - Paid

Collected and included

- Stereotypical: Number of annotators that labeled the attribute token to be considered stereotypically associated with the identity term in the society.
- Non Stereotypical: Number of annotators that labeled the attribute token to not be considered stereotypically associated with the identity term in the society.
- Not sure: Number of annotators unaware or unsure of any such association between the identity term and token
- Total: Total number of annotations for the tuple

Collected and excluded

- none

INCLUSION CRITERIA

Tuples for annotation: Taken from existing datasets

- Seed tuples were obtained from previous literature and datasets, such as papers including: Nangia et al., 2020, Nadeem et al., 2020.
- Identity terms for demonyms were obtained from Wikipedia
- Generations of new tuples done through leveraging LLMs.

EXCLUSION CRITERIA

Tuples for annotation: Taken from existing datasets

- Tuples with high salience scores were annotated. The others were excluded.

DATA PROCESSING

Tuples were generated using LLMs PaLM and GPT-3 using stereotypes from earlier published work as seeds.
Noisy text and non alphabet characters were removed from the data.

SENSITIVE DATA

FIELDS WITH SENSITIVE DATA

SECURITY AND PRIVACY HANDLING

User Content User Metadata User Activity Data Identifiable Data S/PII Business Data Employee Data Pseudonymous Data Anonymous Data Health Data Children's Data **None** Others* (*please specify)	NA	NA

SENSITIVE HUMAN ATTRIBUTES	SOURCE(S) OF HUMAN ATTRIBUTES	RATIONALE FOR COLLECTING HUMAN ATTRIBUTES
Race Gender Ethnicity Socio-economic status **Geography** Language Sexual Orientation Religion Age **Culture** Disability Experience or Seniority Others (please specify)	**[Human Attribute]:** Source **[Geography]:** the stereotypes are related to demonyms or the region of the world a person belongs to. **[Culture]:** Annotators were asked to label whether the attribute token of the tuple is commonly believed to be Stereotypically associated to the identity term of the tuple. This annotation inherently and intentionally captures the view of the society or the culture.	We collect stereotypes associated to a person's geographical belonging, which is also inherently related to their culture. This helps create a benchmark with a broad coverage so systems and models deployed across the globe can be more rigorously evaluated.

TRANSFORMATIONS APPLIED		LIBRARIES AND METHODS USED

Anomaly Detection Cleaning Mismatched Values Cleaning Missing Values Converting Data Types Data Aggregation Dimensionality Reduction Joining Input Sources Redaction or Anonymization **Others*** (*Cross-product of tokens and identity terms, tuple filtering, annotation aggregation)	○	• Cross product: python basic functions • Tuple filtering: python basic functions, NLTK for tokenization • Annotation aggregation: python basic functions
SAMPLING METHOD(S)	**SAMPLING CHARACTERISTIC(S)**	• **SAMPLING CRITERIA**
Cluster Sampling Haphazard Sampling Multi-stage Sampling Random Sampling Retrospective Sampling Stratified Sampling Systematic Sampling Weighted Sampling Unknown Unsampled Others* (*Frequency-based sampling)	Frequency-based sampling • Tuples are selected based on the frequency in generated text, along with the uniqueness of attribute terms in the tuples.	Frequency based sampling • Tuples most frequently occurring are collected and ordered. • Tuples where the attribute token occurs with every identity term of that axis are also filtered out.
ANNOTATION WORKFORCE TYPE	**ANNOTATION CHARACTERISTICS**	**ANNOTATION DESCRIPTION**

Annotation Target in Data Machine-generated Annotations Human Annotations - Expert **Human Annotations - Non-expert** Human Annotations - Employees Human Annotations - Contractors Human Annotations - Crowdsourcing Human Annotations - Outsourced / Managed Teams Unlabeled Others* (*Please specify)	Stereotype annotation Number of annotators per example 6	Stereotype annotation • Annotation was obtained for two tasks. • Each tuple is shown to 6 annotators for labeling whether it is a commonly held stereotype in the society. • For the list of attributes, they are ordered by prevalence and annotations for their offensiveness on a Likert scale is obtained.
	ANNOTATOR BREAKDOWN	**ANNOTATOR DESCRIPTION**
	Stereotype annotation Annotator type Paid - Non-expert Total unique annotators 89 Total cost of annotation 23,100 USD Expertise of annotators Trained for task	Stereotype annotation • We recruited 89 annotators across all regions for annotating stereotypes. • To test their understanding of the task, we conducted a pilot annotation.

VALIDATION METHOD(S)	VALIDATION BREAKDOWN	DESCRIPTION OF VALIDATION
Data Type Validation Range and Constraint Validation Code/cross-reference Validation Structured Validation Consistency Validation Not Validated Others* (*Please specify)	N/A	Data Type Validation The token and identity term columns are checked to be strings of text. The Stereotypical, Non Stereotypical, Not sure, Total columns are checked to be integers. This was checked using and corrected (if needed) using basic python functions.
	VALIDATORS CHARACTERISTIC(S)	**VALIDATORS DESCRIPTION(S)**
	N/A (automatic validation)	N/A (automatic validation)

ML APPLICATION(S)		
N/A The dataset was not used for any applications. No training or fine-tuning of systems was performed. The data was only used for diagnostic analysis of existing models and not used to create any new systems		

Terms of Art

Concepts and Definitions referenced in this Data Card

Identity terms	Attribute Tokens (or tokens for short)
Definition: These are words used to describe a group of people with a common trait or identity. In the context of this data we identify identity terms along region, specifically demonyms. For eg: Croatioans is a term used to describe the people of Croatia, Hawaiians is a term used to describe people who are from the US state of Hawaii.	Definition: These are characteristics or attributes for which we aim to identify stereotypical associations. These span categories like profession, adjectives, socio-economic status, subjects of study and so on. For eg: doctor, teacher (profession), poor, powerful (socio-economic status), smart, handsome, ugly (adjectives), computer science, mathematics (subjects of study) and so on.
Tuple	**Stereotype/Stereotypical**
Definition: A combination of one identity term and one attribute token. For eg: (Hindu, Priest); (Punjabi, Dance) etc.	Definition: In social psychology, a stereotype is a generalized belief about a particular category of people. It is an expectation that people might have about every person of a particular group. Source: Wikipedia

Reflections on Data

Limitations due to human annotation	Annotation about stereotypes and their prevalence in society is subjective. While we attempt to capture diversity in our annotator pool wrt gender and geographical region, we recognize that it still does not capture all different opinions and perspectives. Future iterations of such data collection should take more participatory approaches and involve communities with lived experiences on the harms of bias in society.
No ground truth on "Stereotype"	We recognize that there is no "ground-truth" on labeling something as a "Stereotype". This is an inherently subjective opinion that is influenced by socio-cultural factors and personal experiences. Thus, we caution against using the data in this dataset to in any way classify tuples as "Stereotypical" vs "Non-stereotypical".
Stereotypes not captured by this dataset	We generate candidate stereotypes using seeds which could influence what is generated. Our annotations are also limited by annotators available. This limits what gets annotated as a stereotype, and there exist stereotypes not captured by our dataset.
Caution against calling models "fair" based on evaluation on this dataset	This dataset is insufficient to capture all stereotypes associated with geographical and regional diversity across the globe. Additionally, our dataset reflects the judgements of a small number of annotators. Hence, they should be used only for diagnostic and research purposes, and not as benchmarks to prove lack of bias.