

# WISDOM FOR THE CROWD: DISCURSIVE POWER IN ANNOTATION INSTRUCTIONS FOR COMPUTER VISION

Milagros Miceli and Julian Posada  
Weizenbaum Institute / University of Toronto

## This Research

Our investigation focuses on the experiences of **Argentine and Venezuelan workers** who perform **data annotation** tasks at three **crowdsourcing platforms** and a **BPO** firm. Through qualitative methods, we explore the **discourses encoded in the task instructions** that these workers follow to annotate computer vision datasets. Our findings provide insights into the role of data annotation labor practices in the **reproduction of social inequities in image datasets and computer vision systems**.

## Method

This study comprises **two qualitative methods**:

- **Critical discourse analysis** to interrogate 220 instruction documents. We focus on the taxonomies at the core of pre-defined truth values embedded in the instructions and identify naturalized discourses encoded in them.
- **In-depth interviewing** to understand labor practices as well as obtaining additional information about the contexts and relations that inform how annotation task instructions come to be and how assignments are carried out. We conducted 62 interviews with data annotators, managers, quality assurance analysts, and CV practitioners.

## Preliminary Findings

The **politics of computer vision** are inextricably connected to the **power relations** behind **data work**, which allow preconceived **hegemonic forms of knowledge** to get encoded in models via training datasets.

- Workers' **subjectivities** are embedded in large industrial **structures** and subject to **control**.
- Instructed labels prioritize **commercial application** or are easier to **operationalize in computational terms**.
- Instructions carry meanings that are **self-evident to requesters** but not necessarily relevant to Latin American annotators. E.g., labeling according to racial categories based on **US-centered conventions** (See Example 1).

## Examples

### Example 1

In this task you will be determining the **race** of the persons in the images.

You should select only **one** of the following categories:

- White
- African American
- Latinx or Hispanic
- Asian
- Indian
- Ambiguous

### Example 2

Use the "pedestrian" label.

If a pedestrian is sitting on the ground, bench, ledge, then use the "pedestrian" label.

#### UPDATE!!

Use the "**PEDESTRIAN LAYING DOWN**" label for pedestrians laying on benches and laying and sitting on the ground.



Figure 1: Stock image accompanying the instruction with keywords "man, model, hipster."

### Example 3

This is a **high paying job**, a special job, but to gain access to it and to keep access to it after passing the qualification test, we require patience and **VERY careful thought out and accurate responses**. *Otherwise, you will, unfortunately be banned from the job :(*

## Preliminary Findings (Cont'd)

The influence of powerful actors in data annotation is stabilized through:

- Narrow task **instructions** (See Example 2)
- Specially tailored **work interfaces**
- **QA managers** in BPOs
- **QA algorithms** in labor platforms

Annotators have **little room** to improve labels or voice ethical concerns. Instruction documents include warnings that reinforce hierarchical structures and **compel workers to follow orders** (See Example 3).

## Takeaways

- **Power asymmetries** in data annotation are more dangerous than **individual biases**.
- Workers label data according to the **pre-defined truth values** contained in annotation instructions.
- **Naturalized worldviews** are embedded in annotation instructions.
- Annotation instructions reflect **profit-oriented goals and technical choices**.
- Annotators are subject to control and surveillance and are **not allowed to express ethical concerns**.
- Crucial steps towards **reflection, deliberation, and audit in data annotation**:
  - Annotators' **empowerment and decommodification** of their labor.
  - **Documentation** of outsourced processes in dataset production.



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