

1. Now we just focus on five bias types, they are

- Generic He
- Generic She
- Societal Stereotypes
- Behavioural Stereotypes
- Explicit Marking of Sex

Bias Type	Bias Subtype	Example	Methodology
Generic Pronouns	Generic He	A programmer must carry his laptop with him to work.	Supervised Learning
	Generic She	A nurse should ensure that she gets adequate rest.	Supervised Learning
Stereotyping Bias	Societal Stereotypes	Senators need their wives to support them throughout their campaign.	Supervised Learning
	Behavioural Stereotypes	The event was kid-friendly for all the mothers working in the company.	Supervised Learning
Sexism	Hostile Sexism	Women are incompetent at work.	Supervised Learning
	Benevolent Sexism	They're probably surprised at how smart you are, for a girl.	Supervised Learning
Exclusionary Terms	Explicit Marking of Sex	Chairman, Businessman, Manpower, Cameraman	Lexicon-Based
	Gendered Neologisms	Man-bread, Man-sip, Man-tini	Lexicon-Based

2. For Generic He, Generic She, and Explicit Marking of Sex, those three types are very easy to identify, but they're a little ambiguous for Societal Stereotypes and Behavioural Stereotypes. However, Jad Doughman gives more explanation on these two types as follows. One is for a specific social group, like senators, and mothers working in the company, and the other is for a specific person or gender, like aggressive, honest, brave, and intelligent.

3.2 Stereotyping Bias

3.2.1 Societal Stereotype: It is the assumption that certain characteristics or behaviors are unique to specific social group [27]. They depict traditional gender roles that reflect social norms. [20, 38]. Below are a few examples that depict the concept of societal stereotypes:

- Senators need their wives to support them throughout their campaign.
- The event was kid-friendly for all the mothers working in the company.

3.2.2 Behavioural Stereotype: It is a sentence that contains attributes and traits used to describe a specific person or gender. This bias assumes the behaviour of a person from their gender.

- All boys are aggressive.
- Mary must love dolls because all girls like playing with them.

3. Annotation Process

- First, Veselin will filter out sentences containing biased words in the [file](#).
- Then, open Doccano according to the instruction on the [Doccano Github website](#)

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To install doccano, simply run:

pip install doccano

By default, SQLite 3 is used for the default database. If you want to use PostgreSQL, install the additional dependencies:

pip install 'doccano[postgresql]'

and set DATABASE_URL environment variable according to your PostgreSQL credentials:

DATABASE_URL="postgres://${POSTGRES_USER}:${POSTGRES_PASSWORD}@${POSTGRES_HOST}:${POSTGRES_PORT}/

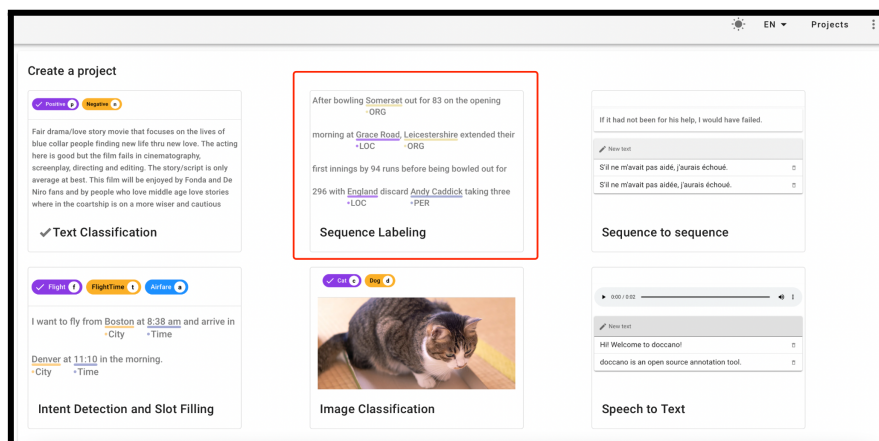
After installation, run the following commands:

# Initialize database.
doccano init
# Create a super user.
doccano createuser --username admin --password pass
# Start a web server.
doccano webserver --port 8000

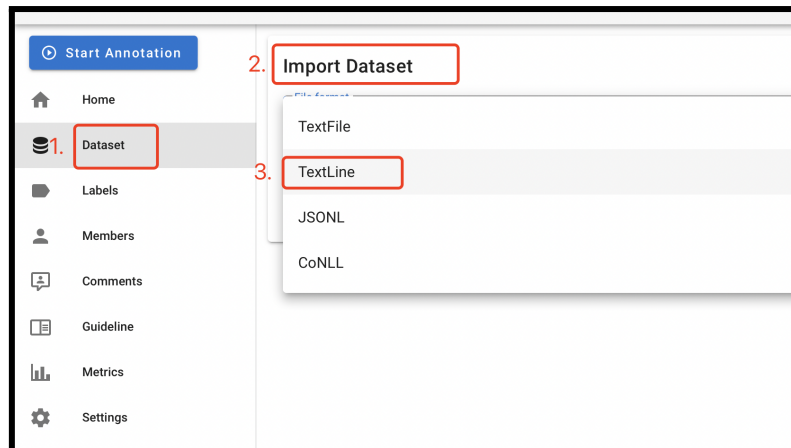
In another terminal, run the following command:

# Start the task queue to handle file upload/download.
doccano task
```

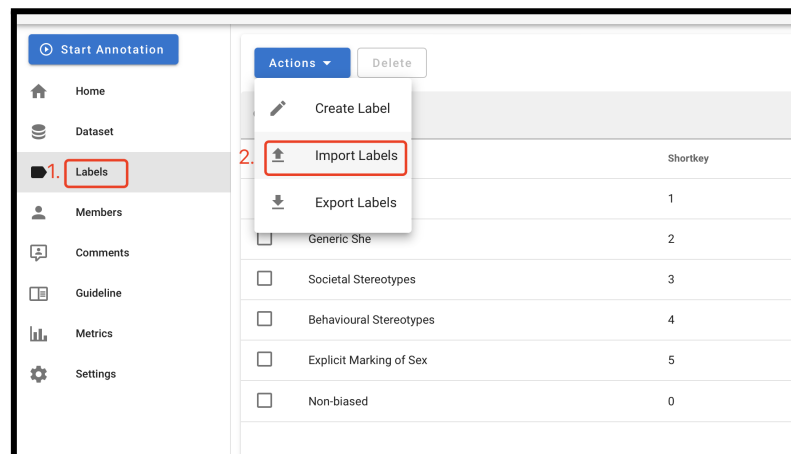
- After that, create a project, we should use **Sequence Labeling** together,



- Then, you can import these sentences into Doccano as follows (**Note, you need to delete other redundant rows or columns in your sentence csv file, and only retain the sentence column in your csv file**)



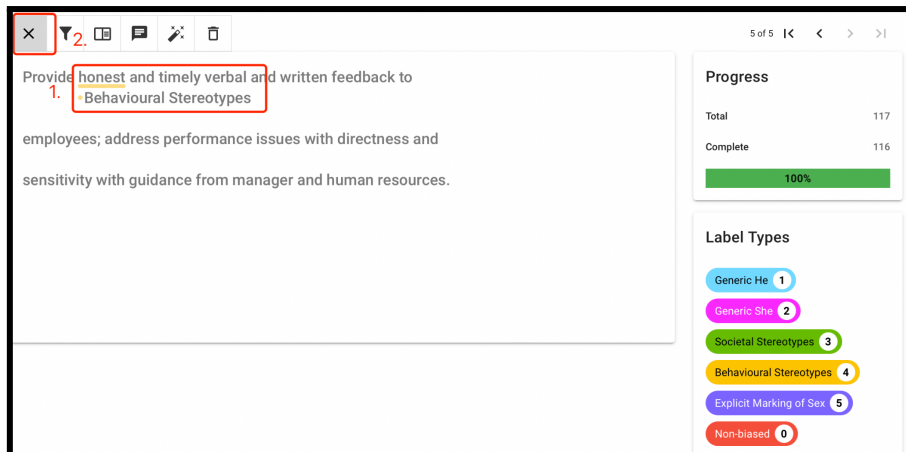
- Next, import the [pre-defined labels json file](#) into Doccano as follows



- Finally, you can label your sentence, Veselin will tell you which biased words are in each sentence, you need to check the word in the [Bias Annotation file](#) first to see if it's a feminine bias or masculine bias as follows,
- This example shows that **honest** is a feminine bias, which means that this word tends to describe women, so if a job description states that candidates need to be honest, we think it's a **Behavioural Stereotype**.

Biased Words or Phrases	Masculine/Feminine Bias	Reference Source Code	Alternative Sug
cheer	Feminine Bias	24	-
commit	Feminine Bias	24	-
communal	Feminine Bias	24	-
compassion	Feminine Bias	24	-
connect	Feminine Bias	24	-
considerate	Feminine Bias	24	-
cooperat	Feminine Bias	24	-
depend	Feminine Bias	24	-
emotiona	Feminine Bias	24	-
empath	Feminine Bias	24	-
feminine	Feminine Bias	24	-
flatterable	Feminine Bias	24	-
gentle	Feminine Bias	24	-
honest	Feminine Bias	24	-
interpersonal	Feminine Bias	24	-
interdependen	Feminine Bias	24	-
interpersona	Feminine Bias	24	-
kind	Feminine Bias	24	-

- First, you select this biased **word/phrase** and then give it a label. At last, you need to click the cross on the left corner, and it will convert to a check sign, then you finish an annotation.



- Note, one important thing to mention is that if the biased word is not a requirement for candidates, but some descriptions for companies or other people, you need to annotate it as **Non-biased**, like the example below, we think words like **competitive** is a masculine bias about men, but in this case, it's describing the company itself, not candidate, so we label it **Non-biased**. Another important thing is that you need to select "**competitor's traffic**" together not only '**competitor's**', because you need to take the context into account to check whether it's a biased term.

