

Wikipedia Contradiction Annotation Guideline

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1. Setup the Label Studio environment

- 1) install Label Studio locally

Github: <https://github.com/HumanSignal/label-studio>

Here's the command I used to install it in my laptop (make sure python>=3.8):

```
conda create --name label-studio
conda activate label-studio
conda install psycpg2
pip install label-studio
```

About LS version: I'm using Label Studio 1.8.2. Normally all new versions later than 1.8.2 should work, I recommend using google Chrome to do annotation.

- 2) run "label-studio" to start the server at <http://localhost:8080>
- 3) create an account and log in
- 4) create a new project called "WikipediaContradict" or any other names
- 5)

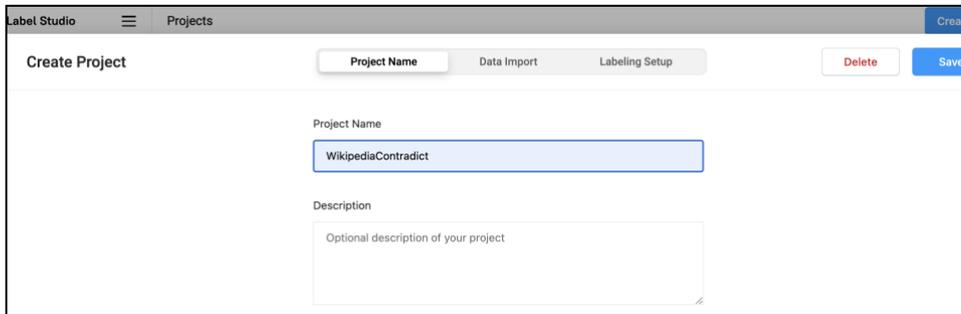


Fig 1: Create a new project

- 6) import the annotation tasks into the platform: first, click "upload files" and choose "inconsistentArticleTags_all.json"; next, click "save" to finish importing the 170 annotation tasks

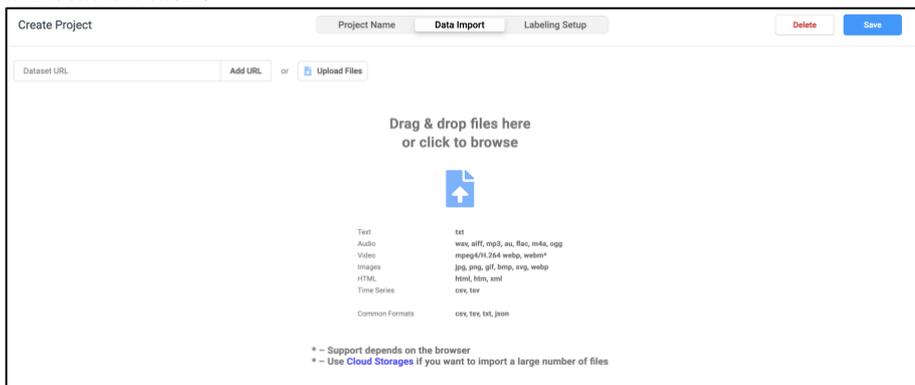


Fig 2: Import annotated data

- 7) setup the annotation UI:
 - a) click "settings" on the upper right corner:



Fig 3: Setup the annotation UI

- b) click “labelling interface”, copy-paste the following UI code into the box (or the code from the “WikipediaContradiction_LabelStudioUI”), then click “save”. After this, you can start annotating by clicking “Label All Tasks” or any task in the panel.

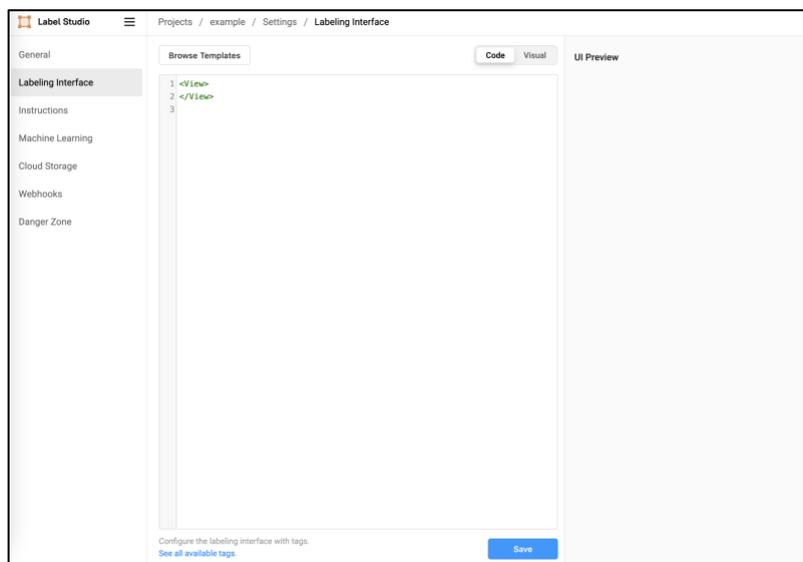


Fig 4: Setup the annotation UI - Continue

```

<View>
<!-- <header name="articletitle" value="Wikipedia article: $title"/> -->
<HyperText clickableLinks="true" name="articlelink" inline="true" target="_blank" value="">
  <h2><a target="_blank" href="$url">Wikipedia article: $title</a></h2>
</HyperText>

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  <Choice value="Valid"/>
  <Choice value="Invalid"/>
</Choices>
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  required="false" />
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<View>

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2px 5px #999; padding: 20px; margin-top: 2em; border-radius: 5px;">
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wikipedia article(s) into the following boxes"/>
<Header value="* Article A title" />
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  showSubmitButton="true" maxSubmissions="1" editable="true"

```

```

        required="true" />
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    required="true" />
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    required="false" />

<Header value="* Article B title" />

  <TextArea name="paragraphB_article" toName="wikitag"
    showSubmitButton="true" maxSubmissions="1" editable="true"
    required="true" />

<Header value="* Article B relevant information (Passage 2)" />
  <TextArea name="paragraphB_information" toName="wikitag"
    showSubmitButton="true" maxSubmissions="1" editable="true"
    required="true" />
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    showSubmitButton="true" maxSubmissions="1" editable="true"
    required="false" />

</View>

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2px 5px #999; padding: 20px; margin-top: 2em; border-radius: 5px;">
<Header value="* Step 3: Contradiction reason" />
<Header size="8">* Passage 1 states that: </Header> <TextArea name="relevantInfo_comment_A" toName="wikitag"
  showSubmitButton="true" maxSubmissions="1" editable="true"
  required="true" />
<Header size="8">* However, passage 2 states that: </Header> <TextArea name="relevantInfo_comment_B"
toName="wikitag"
  showSubmitButton="true" maxSubmissions="1" editable="true"
  required="true" />
<Header size="8">If possible, copy the contradicted span from passage 1: </Header> <TextArea
name="relevantInfo_comment_A_Span" toName="wikitag"
  showSubmitButton="true" maxSubmissions="1" editable="true"
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name="relevantInfo_comment_B_Span" toName="wikitag"
  showSubmitButton="true" maxSubmissions="1" editable="true"
  required="false" />

</View>

<style>
.center-text {
  text-align: center;
}
</style>

<View visibleWhen="choice-selected" whenTagName="wikitag_label_valid" whenChoiceValue="Valid" style="box-shadow: 2px
2px 5px #999; padding: 20px; margin-top: 2em; border-radius: 5px;">
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    <Choice value="Contradict type I">
      <Choice value="(PhraseLevel) Entity - Date/time" />
      <Choice value="(PhraseLevel) Entity - Location/GPE (Non-GPE locations, mountain ranges, bodies of water, and Countries,
cities, states)" />
      <Choice value="(PhraseLevel) Entity - Number" />
      <Choice value="(PhraseLevel) Entity - Organization (Companies, agencies, institutions, etc.)" />
      <Choice value="(PhraseLevel) Entity - Person" />
      <Choice value="(PhraseLevel) Entity - NORP (Nationalities or religious or political groups)" />
      <Choice value="(PhraseLevel) Entity - FAC (Buildings, airports, highways, bridges, etc.)" />
      <Choice value="(PhraseLevel) Entity - Work-of-Art (Titles of books, songs, etc.)" />
      <Choice value="(PhraseLevel) Entity - Product (Titles of books, songs, etc.)" />
      <Choice value="(PhraseLevel) Entity - Law (Named documents made into laws)" />
      <Choice value="(PhraseLevel) Entity - Language (Any named language)" />
      <Choice value="(PhraseLevel) Entity - Event (Named hurricanes, battles, wars, sports events, etc.)" />
      <Choice value="(PhraseLevel) Entity - Other" />
      <Choice value="(PhraseLevel) NP-related (non-entity)" />
      <Choice value="(PhraseLevel) Event/Relation (e.g., verb)" />
      <Choice value="(DiscourseLevel) NP-related " />

```

```

    <Choice value="(DiscourseLevel) Event/Relation-related " />
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    <Choice value="Text - Infobox/table" />
    <Choice value="Infobox/table - Infobox/table" />
    <Choice value="Other" />
  </Choice>
  <Choice value="Contradict type III">
    <Choice value="Within the same article" />
    <Choice value="Across different articles" />
  </Choice>
  <Choice value="Contradict type IV">
    <Choice value="Explicit" />
    <Choice value="Implicit (reasoning required)" />
  </Choice>
</Taxonomy>
<Header value="Additional comment" />
  <TextArea name="contradict_comment" toName="wikitag"
    showSubmitButton="true" maxSubmissions="1" editable="true"
    required="false" />

</View>

<View visibleWhen="choice-selected" whenTagName="wikitag_label_valid" whenChoiceValue="Valid" style="box-shadow: 2px
2px 5px #999; padding: 20px; margin-top: 2em; border-radius: 5px; ">
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different responses based on each passage." />
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    showSubmitButton="true" maxSubmissions="1" editable="true"
    required="true" />
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    showSubmitButton="true" maxSubmissions="1" editable="true"
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  <Header value="Question 2" />
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    required="false" />
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    showSubmitButton="true" maxSubmissions="1" editable="true"
    required="false" />
  <TextArea name="question2_answer2" toName="wikitag"
    showSubmitButton="true" maxSubmissions="1" editable="true"
    required="false" />

  <Header value="Additional comment" />
  <TextArea name="qa_comment" toName="wikitag"
    showSubmitButton="true" maxSubmissions="1" editable="true"
    required="false" />

</View>

</View>

```

Another way is to choose the assigned tasks (e.g., 31 - 40) and click “Label 10 Tasks”, this will open the annotation window for these 10 tasks.

ID	Completed	Annotated by	paragraph_A	title	url	paragraph_A_clean	tag
9414	Feb 18 2024, 23:27:38		In April 1956 the division was disbanded and transferred to the People's	10th Garrison Division (People's Republic of China)	https://en.wikipedia.org/wiki/10th_Garrison_Division_(People's_Republic_of_China)	In April 1956 the division was disbanded and transferred to the People's	Inconsistentdate=December 2018
9415	Feb 18 2024, 23:36:25		* The northbound span was originally named the 14th Street Bridge when it	14th Street bridges	https://en.wikipedia.org/wiki/14th_Street_bridges	* The northbound span was originally named the 14th Street Bridge when it	Inconsistentdate=June 2023
9416	Feb 18 2024, 23:40:52		Aboriginal people of Western Australia practiced an oral tradition with no	Aboriginal history of Western Australia	https://en.wikipedia.org/wiki/Aboriginal_history_of_Western_Australia	Aboriginal people of Western Australia practiced an oral tradition with no	Inconsistentreason-there are only three sub-sections below
9417	Feb 18 2024, 23:41:48		Code-switching, or the alternation of languages within a single	African French	https://en.wikipedia.org/wiki/African_French	Code-switching, or the alternation of languages within a single	Inconsistentdate=May 2012
9418	Feb 18 2024, 23:41:55		Sexual acts with children younger than 13 are illegal	Agas of consent in South America	https://en.wikipedia.org/wiki/Agas_of_consent_in_South_America	Sexual acts with children younger than 13 are illegal	Inconsistent
9419	Feb 18 2024, 23:45:44		His novel <i>Gabinoul</i> appeared in 1919.	Pierre Albert Biot	https://en.wikipedia.org/wiki/Pierre_Albert_Biot	His novel <i>Gabinoul</i> appeared in 1919.	Inconsistentdate=October 2021
9420	Feb 18 2024, 23:48:09		vWFS is a type of integrin that binds to matrix macromolecules and	Alpha v beta 5	https://en.wikipedia.org/wiki/Alpha_v_beta_5	vWFS is a type of integrin that binds to matrix macromolecules and	InconsistentApril 2019
9421	Feb 18 2024, 23:48:40		thumb right AN/APQ-10 with AN/APQ-59	AN/APQ-120	https://en.wikipedia.org/wiki/AN/APQ-120	thumb right AN/APQ-10 with AN/APQ-59	Inconsistentdate=October 2022 reason=AN/APQ-59 is described above as a radar
9422	Feb 18 2024, 23:52:34		Heri N/A 19th dynasty c. 2500 BC	Ancient Egyptian medicine	https://en.wikipedia.org/wiki/Ancient_Egyptian_medicine	Heri N/A 19th dynasty c. 2500 BC	Inconsistentdate=January 2017 reason=Dynasty and date give are incompatible
9423	Feb 18 2024, 23:59:57		Antherina is a monotypic moth genus in the family Saturniidae erected by	Antherina	https://en.wikipedia.org/wiki/Antherina	Antherina is a monotypic moth genus in the family Saturniidae erected by	Inconsistentdate=October 2022 reason=How can food plants vary from species to

Fig 5: Choosing the annotation tasks

2. Task annotation

Step1: Check whether the inconsistent tag is valid.

1) Open the Wikipedia article by clicking the corresponding link (Fig 6), identify the paragraph tagged with the inconsistent tag by searching “inconsistent” (Fig 7).

#9414 **bnxiaofang** #162 about 13 hours ago

Wikipedia article: [10th Garrison Division \(People's Republic of China\)](#)

Inconsistence or contradictory tag

In April 1956 the division was disbanded and transferred to the People's Liberation Army Navy and reorganized as 7th Institute of the Department of Defense, except its 3rd Battalion, 38th Garrison Regiment. Inconsistentdate=December 2018

Step1: Is this tag valid?

Valid^[1] Invalid^[2]

Additional comment

Reason from the edit history: disbanded then 3 more years of events? [↗](#)

Fig 6: Annotation – step 1

In April 1956 the division was disbanded and transferred to the [People's Liberation Army Navy](#) and reorganized as 7th Institute of the Department of Defense, except its 3rd Battalion, 38th Garrison Regiment. Inconsistent

This statement is inconsistent with other parts of the article. (December 2018)

Fig 7: Read the Wikipedia article

2) Read the Wikipedia article to check whether the tag makes sense. In the above example, the Wikipedia editor who added this tag didn't specify the reason as an attribute of the tag. Although this is the recommended template, they simply didn't follow the rules, so we need to investigate further. We know that this tag was added in December 2018, so we can check

the editing history of this article to see under what condition this tag was added. In the revision history (see the figure below) we see that the editor put the reason in the edit comment “disbanded then 3 more years of events?” (last line in Fig 8). After checking this reason, if we agree that this inconsistent tag is valid, we go back to label studio and choose “valid” and put the reason in the additional comment box, as shown in Fig 1.

10th Garrison Division (People's Republic of China): Revision history

Article [Talk](#) [Read](#) [Edit](#) [View history](#) [Tools](#)

[View logs for this page \(view filter log\)](#)

Filter revisions

External tools: [Find addition/removal](#) · [Find edits by user](#) · [Page statistics](#) · [Pageviews](#) · [Fix dead links](#)

For any version listed below, click on its date to view it. For more help, see [Help:Page history](#) and [Help:Edit summary](#). (cur) = difference from current version, (prev) = difference from preceding version, m = minor edit, → = section edit, ← = automatic edit summary

Compare selected revisions

- [\(cur | prev\)](#) [01:30, 16 November 2021](#) [Rastination \(talk | contribs\)](#) .. (3,729 bytes) (−728) .. *(WP:UGC WP:BLOGS)* [\(undo\)](#)
- [\(cur | prev\)](#) [01:49, 31 January 2021](#) [InternetArchiveBot \(talk | contribs\)](#) .. (4,457 bytes) (+144) .. *(Rescuing 1 sources and tagging 0 as dead.) #IABot (v2.0.8)* [\(undo\)](#)
- [\(cur | prev\)](#) [07:23, 8 September 2019](#) [Vami IV \(talk | contribs\)](#) .. (4,313 bytes) (−38) .. *(→References)* [\(undo\)](#)
- [\(cur | prev\)](#) [20:14, 4 January 2019](#) [InternetArchiveBot \(talk | contribs\)](#) .. (4,351 bytes) (+43) .. *(Rescuing 1 sources and tagging 0 as dead.) #IABot (v2.0beta10ehf1)* [\(undo\)](#)
- [\(cur | prev\)](#) [00:27, 13 December 2018](#) [Wisnymanski \(talk | contribs\)](#) .. (4,308 bytes) (+35) .. *(disbanded then 3 more years of events?)* [\(undo\)](#)

Fig 8: Checking the revision history of a Wikipedia article

Step2: find the inconsistent passages.

Copy the inconsistent sentences, paragraphs, or information (e.g., table or infobox rows) from the Wikipedia article(s) into the following boxes:

Step 2: Copy the inconsistent sentences, paragraphs, or information (e.g., table or infobox rows) from the wikipedia article(s) into the following boxes

Article A title

10th Garrison Division (People's Republic of China) [🔗](#) [📄](#)

Article A relevant information (Passage 1)

In April 1956 the division was disbanded and transferred to the People's Liberation Army Navy and reorganized as 7th Institute of the Department of Defense, except its 3rd Battalion, 38th Garrison Regiment. [🔗](#)

Article A relevant information_stand-alone (Passage 1)

In April 1956 the 10th Garrison Division (People's Republic of China) was disbanded and transferred to the People's Liberation Army Navy and reorganized as 7th Institute of the Department of Defense, except its 3rd Battalion, 38th Garrison Regiment. [🔗](#)

Article B title

10th Garrison Division (People's Republic of China) [🔗](#) [📄](#)

Article B relevant information (Passage 2)

In March 1956 the division was reorganized as 3rd Garrison Division and was transferred to Guangzhou Military Region's control. Merely a month later, in April 1956 the division was further renamed as 3rd Machine-gun Artillery Division. The division then stationed in Zhongshan City, Guangdong. The machine-gun artillery division was also short-lived. In August 1956 the division was reduced and renamed as 10th Garrison Brigade. In May 1957 the brigade was inactivated and absorbed into Foshan Military Sub-district. In April 1959 the unit was re-activated from Foshan Military Sub-district as 10th Garrison Division. The division was then composed of: 37th Garrison Regiment; 38th Garrison Regiment; 39th Garrison Regiment; 1st Maritime Patrol Unit; 2nd Maritime Patrol Unit; 3rd Maritime Patrol Unit; 5th Maritime Patrol Unit. In December 1959, 39th Garrison Regiment and all four Maritime Patrol Units were transferred to Wanhui Fortress District's control. [🔗](#)

Article B relevant information_stand-alone (Passage 1)

In March 1956 the 10th Garrison Division (People's Republic of China) was reorganized as 3rd Garrison Division and was transferred to Guangzhou Military Region's control. Merely a month later, in April 1956 the division was further renamed as 3rd Machine-gun Artillery Division. The division then stationed in Zhongshan City, Guangdong. The machine-gun artillery division was also short-lived. In August 1956 the division was reduced and renamed as 10th Garrison Brigade. In May 1957 the brigade was inactivated and absorbed into Foshan Military Sub-district. In April 1959 the unit was re-activated from Foshan Military Sub-district as 10th Garrison Division. The division was then composed of: 37th Garrison Regiment; 38th Garrison Regiment; 39th Garrison Regiment; 1st Maritime Patrol Unit; 2nd Maritime Patrol Unit; 3rd Maritime Patrol Unit; 5th Maritime Patrol Unit. In December 1959, 39th Garrison Regiment and all four Maritime Patrol Units were transferred to Wanhui Fortress District's control. [🔗](#)

Fig 9: Annotation – step 2

For this annotation task, often “Article A title” and “Article B title” are the same. Note that “Article A relevant information (Passage 1)” and “Article B relevant information (Passage 2)” contain the original passage information from the Wikipedia, which means that you should copy-paste the original information into these boxes without modifying them. When copying the original passages into these boxes, please remove the citation marks and the inconsistent tags ({{inconsistent ...}}). For “Article A relevant information_stand-alone (Passage 1)” and “Article B relevant information_stand-alone (Passage 2)”, you are required to slightly modify the original passages to make them stand-alone (decontextualization). Normally, this requires you to resolve the coreference anaphors or the bridging anaphors in the first sentence. In Wikipedia, oftentimes the antecedents for these anaphors are the article titles themselves.

Example of resolving coreference anaphors:

In the example shown in Fig 9, we replace “the division” in the first sentence of both passages as “the 10th Garrison Division (People’s Republic of China)”

Below is another example of resolving coreference anaphors:

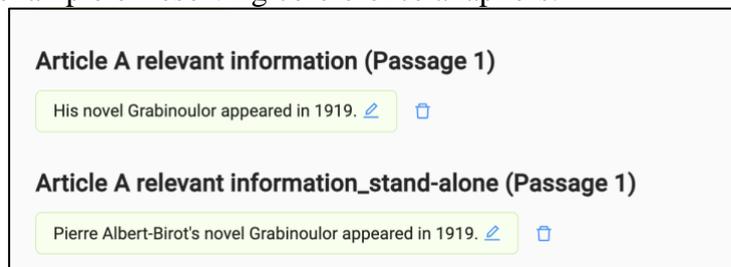


Fig 10: resolving coreference anaphors

Example of resolving bridging anaphors (one of my favorite topics 😊):

In the following example as shown in Fig 11, we replace “The larvae” in the first sentence as “The larvae of Antherina”



Fig 11: resolving bridging anaphors

Step3: Annotate the contradiction reason.

In this step, we use the template “passage 1 states that ..., however, passage 2 states that ...” to annotate the contradiction reason (see Fig 12). If possible, please copy-paste the exact contradicted spans (short phrases within a sentence) from both passages, such as “was disbanded” from passage 1 as shown in Fig 12. In this example, we leave the contradicted span from passage 2 empty since it involves a series of events across multiple sentences. Fig 13 shows an example in which we can easily identify the contradicted spans in both passages.

Step 3: Contradict reason

Passage 1 states that:

In April 1956 the division was disbanded [↗](#) [🗑](#)

However, passage 2 states that:

The division had a series of activities from 1956 to 1959. [↗](#) [🗑](#)

If possible, copy the contradicted span from passage 1:

was disbanded [↗](#) [🗑](#)

If possible, copy the contradicted span from passage 2:

Fig 12: Annotate the contradiction reason

Step 3: Contradict reason

Passage 1 states that:

The northbound span of 14th Street bridges was renamed the Arland D. Williams Jr. Memorial Bridge in 1983. [↗](#) [🗑](#)

However, passage 2 states that:

The northbound span of 14th Street bridges was renamed the Arland D. Williams Jr. Memorial Bridge on March 13, 1985. [↗](#) [🗑](#)

If possible, copy the contradicted span from passage 1:

1983 [↗](#) [🗑](#)

If possible, copy the contradicted span from passage 2:

March 13, 1985 [↗](#) [🗑](#)

Fig 13: Annotate the contradiction reason – another example

Step4: Annotate the contradiction types.

In this step, we assign the identified contradictory information to the appropriate types according to a pre-defined taxonomy. Back to our first example as shown in Fig 6/9/12, we assign it to the following contradiction types as shown in Fig 14

Step 4: Choose all options that can describe the above contradictory information

(DiscourseLevel) Event/Relation-related Text - Text Within the same article Implicit (reasoning required)

Fig 14: Annotate the contradiction types

Below we provide more details four the pre-defined four contradiction types.

1) Contradiction type I: As shown in Fig 15, contradiction type I focuses on the fine-grained semantics of the contradiction.

▼ Contradict type I 17

- (PhraseLevel) Entity - Date/time
- (PhraseLevel) Entity - Location/GPE (Non-GPE locations, mountain ranges, bodies of water, and Countries, cities, states)
- (PhraseLevel) Entity - Number
- (PhraseLevel) Entity - Organization (Companies, agencies, institutions, etc.)
- (PhraseLevel) Entity - Person
- (PhraseLevel) Entity - NORP (Nationalities or religious or political groups)
- (PhraseLevel) Entity - FAC (Buildings, airports, highways, bridges, etc.)
- (PhraseLevel) Entity - Work-of-Art (Titles of books, songs, etc.)
- (PhraseLevel) Entity - Product (Titles of books, songs, etc.)
- (PhraseLevel) Entity - Law (Named documents made into laws)
- (PhraseLevel) Entity - Language (Any named language)
- (PhraseLevel) Entity - Event (Named hurricanes, battles, wars, sports events, etc.)
- (PhraseLevel) Entity - Other
- (PhraseLevel) NP-related (non-entity)
- (PhraseLevel) Event/Relation (e.g., verb)
- (DiscourseLevel) NP-related

(DiscourseLevel) Event/Relation-related ...

Fig 15: Contradiction type I

Contradiction Type 1 – Phrase level – Entity: The contradictory information is around two named entities in passage 1 and passage 2. Normally phrase level contradiction can be easily fixed by changing one of the named entities (if we know which one is factually correct). We adapt OntoNotes named entity type definitions to describe the different types of contradicted named entities. For each named entity type, its and the explanation included in the parenthesis should provide a clear definition of the corresponding named entity type. The following example shown in Fig 16 was assigned to “(phraseLevel) – Entity-Date/time”.

Step 3: Contradiction reason

Passage 1 states that:

The northbound span of 14th Street bridges was renamed the Arland D. Williams Jr. Memorial Bridge in 1983.

However, passage 2 states that:

The northbound span of 14th Street bridges was renamed the Arland D. Williams Jr. Memorial Bridge on March 13, 1985.

If possible, copy the contradicted span from passage 1:

1983

If possible, copy the contradicted span from passage 2:

March 13, 1985

Step 4: Choose all options that can describe the above contradictory information

(PhraseLevel) Entity - Date/time
 Text - Text
 Within the same article
 Explicit

Fig 16: Contradiction type example

Contradiction Type 1 – Phrase level – Non-entity NP: The contradictory information is around two noun phrases that are not named entities in passage 1 and passage 2. In the following example as shown in Fig 17, the contradicted information are around two common nouns: monotypic (passage 1) and species to species (passage 2).

Step 3: Contradiction reason

Passage 1 states that:

Antherina is a monotypic. ## Additional Explanation: According to the world knowledge, a monotypic species is one that does not include subspecies. [↗](#) [✕](#)

However, passage 2 states that:

The foodplants for the larvae of Antherina differ from species to species. [↗](#) [✕](#)

If possible, copy the contradicted span from passage 1:

monotypic [↗](#) [✕](#)

If possible, copy the contradicted span from passage 2:

species to specie [↗](#) [✕](#)

Step 4: Choose all options that can describe the above contradictory information

(PhraseLevel) NP-related (non-entity) ✕ Text - Text ✕ Within the same article ✕ Implicit (reasoning required) ✕

Click to add... [▼](#)

Fig 17: Contradiction type example

Contradiction Type 1 – Phrase level – Event/relation: The contradictory information is around two verb phrases that are describe two contradicted events or relations in passage 1 and passage 2. In the following example as shown in Fig 18, the contradicted information are around two verbs: “stimulates” (passage 1) and “inhibits” (passage 2).

Step 3: Contradiction reason

Passage 1 states that:

αVβ5 stimulates angiogenesis. [↗](#) [✕](#)

However, passage 2 states that:

αVβ5 inhibits angiogenesis. [↗](#) [✕](#)

If possible, copy the contradicted span from passage 1:

stimulates [↗](#) [✕](#)

If possible, copy the contradicted span from passage 2:

inhibits [↗](#) [✕](#)

Step 4: Choose all options that can describe the above contradictory information

(PhraseLevel) Event/Relation (e.g., verb) ✕ Text - Text ✕ Within the same article ✕ Explicit ✕

Click to add... [▼](#)

Fig 18: Contradiction type example

Contradiction Type 1 – Discourse level – NP-related: The contradictory information is beyond the single sentence level from passage 1 and passage 2. The contradicted information from passage 1 can be anchored to a NP span, and the contradicted information from passage 2 is across multiple sentences. In the following example as shown in Fig 19, the contradicted information from passage 1 can be anchored to an NP: “five periods of time”, and the contradicted information from passage 2 contains a few paragraphs that contains three sub-section headers indicating three time periods.

Step 3: Contradiction reason

Passage 1 states that:

Aboriginal history in Western Australia has been grouped into five periods of time

However, passage 2 states that:

three time periods indicated by three sub-section headers

If possible, copy the contradicted span from passage 1:

five periods of time

If possible, copy the contradicted span from passage 2:

Add

Step 4: Choose all options that can describe the above contradictory information

(DiscourseLevel) NP-related x Text - Text x Within the same article x Implicit (reasoning required) x

Click to add...

Fig 19: Contradiction type example

Contradiction Type 1 – Discourse level – Event/relation-related: The contradictory information is beyond the single sentence level from passage 1 and passage 2. The contradicted information from passage 1 can be anchored to a verb phrase, and the contradicted information from passage 2 is across multiple sentences. In the following example as shown in Fig 20, the contradicted information from passage 1 can be anchored to a VP: “was disbanded”, and the contradicted information from passage 2 contains a few paragraphs that describes a series of events.

Step 3: Contradiction reason

Passage 1 states that:

In April 1956 the division was disbanded

However, passage 2 states that:

The division had a series of activities from 1956 to 1959.

If possible, copy the contradicted span from passage 1:

was disbanded

If possible, copy the contradicted span from passage 2:

Add

Step 4: Choose all options that can describe the above contradictory information

(DiscourseLevel) Event/Relation-related x Text - Text x Within the same article x Implicit (reasoning required) x

Click to add...

Fig 20: Contradiction type example

2) Contradiction type II: As shown in Fig 21, contradiction type II focuses on the modality the contradiction. It describes the modality of passage 1 and passage 2, whether the information is from a piece of text, or from a row an infobox or a table. Fig 22 shows an example of “contradict type II – infobox/table – Infobox/table”.

Contradict type II 4

Text - Text

Text - Infobox/table

Infobox/table - Infobox/table

Other

Fig 21: Contradiction type II

Step 3: Contradiction reason

Passage 1 states that:

Iwti served the King in 19th dynasty. [↗](#) [✕](#)

However, passage 2 states that:

Iwti served the King in c. 2500 BC. [↗](#) [✕](#)

If possible, copy the contradicted span from passage 1:

19th dynasty [↗](#) [✕](#)

If possible, copy the contradicted span from passage 2:

c. 2500 BC [↗](#) [✕](#)

Step 4: Choose all options that can describe the above contradictory information

(PhraseLevel) Entity - Date/time [✕](#) Infobox/table - Infobox/table [✕](#) Within the same article [✕](#) Explicit [✕](#)

Click to add... [▼](#)

Fig 22: Contradiction type example

3) Contradiction type III: As shown in Fig 23, contradiction type III focuses on the source the contradiction. It describes whether passage 1 and passage 2 are from the same article or not. For the inconsistent tags, most of contradictions are from the same article. In a few rare cases, the contradiction is from different articles. Fig 24 illustrates such an example: passage 1 is from the English version of the Wikipedia article “Pierre Albert-Birot” and passage 2 is from the French version of the article.

▼ Contradict type III 2

Within the same article

Across different articles

Fig 23: Contradiction type III

Step 3: Contradiction reason

Passage 1 states that:

Pierre Albert-Birot's novel Grabinoulor appeared in 1919. [↗](#) [✕](#)

However, passage 2 states that:

Pierre Albert-Birot's novel Grabinoulor appeared in 1918. [↗](#) [✕](#)

If possible, copy the contradicted span from passage 1:

1919 [↗](#) [✕](#)

If possible, copy the contradicted span from passage 2:

1918 [↗](#) [✕](#)

Step 4: Choose all options that can describe the above contradictory information

(PhraseLevel) Entity - Date/time [✕](#) Text - Text [✕](#) Across different articles [✕](#) Explicit [✕](#)

Click to add... [▼](#)

Fig 24: Contradiction type example

4) Contradiction type IV: As shown in Fig 25, contradiction type IV focuses on the reasoning aspect. It describes whether the contraction is explicit or implicit. Implicit contradiction requires us do to some reasoning to understand why passage 1 and passage 2 are contradicted. In the example shown in Fig 17, to understand that “monotypic (passage 1)” and “species to species (passage 2)” are contradicted, we need to carry out additional reasoning steps, i.e., first we need to know that according to commonsense knowledge, a

monotypic species is one that does not include subspecies; then “species to species” entails that there are more than one specie. Therefore, we can conclude that passage 1 is contradicted with passage 2.

Explicit
 Implicit (reasoning required)

Fig 25: Contradiction type IV

Note: If the contradictory information exhibits other important attributes that are not covered by the existing taxonomy, using the additional comment box to describe it. Figure 26 shows such an example: passage 1 is from the English Wikipedia article, and passage 2 is from the French Wikipedia article, therefore in the additional comment for Step 4 we put “across different languages”

Step 3: Contradiction reason
 Passage 1 states that:
 Pierre Albert-Birot's novel Grabinoulor appeared in 1919.
 However, passage 2 states that:
 Pierre Albert-Birot's novel Grabinoulor appeared in 1918.
 If possible, copy the contradicted span from passage 1:
 1919
 If possible, copy the contradicted span from passage 2:
 1918

Step 4: Choose all options that can describe the above contradictory information
 (PhraseLevel) Entity - Date/time × Text - Text × Across different articles × Explicit ×
 Click to add...
Additional comment
 across different languages

Fig 26: Additional contradiction Type

Step5: Annotate the question and answers.

In this step, we formulate at least one question that highlights the contradictions between Passage 1 and Passage 2, eliciting different responses based on each passage. Fig 27 shows a question and answers example about the contradicted information in Fig 16.

Step 5: Write a question based on the above contradictory information that leads to different answers
Question
 When was the northbound span of the 14th Street Bridge renamed the Arland D. Williams Jr. Memorial Bridge?
Answers
 1983
 March 13, 1985

Fig 27: write a question and different answers

3. Export annotations

After finishing the assigned annotation tasks, go back to the task pool panel, click “Export” and choose “JSON” as the format (Fig 28). Please rename the exported file using the following template: wikipediaContradict_10_<your name>.json

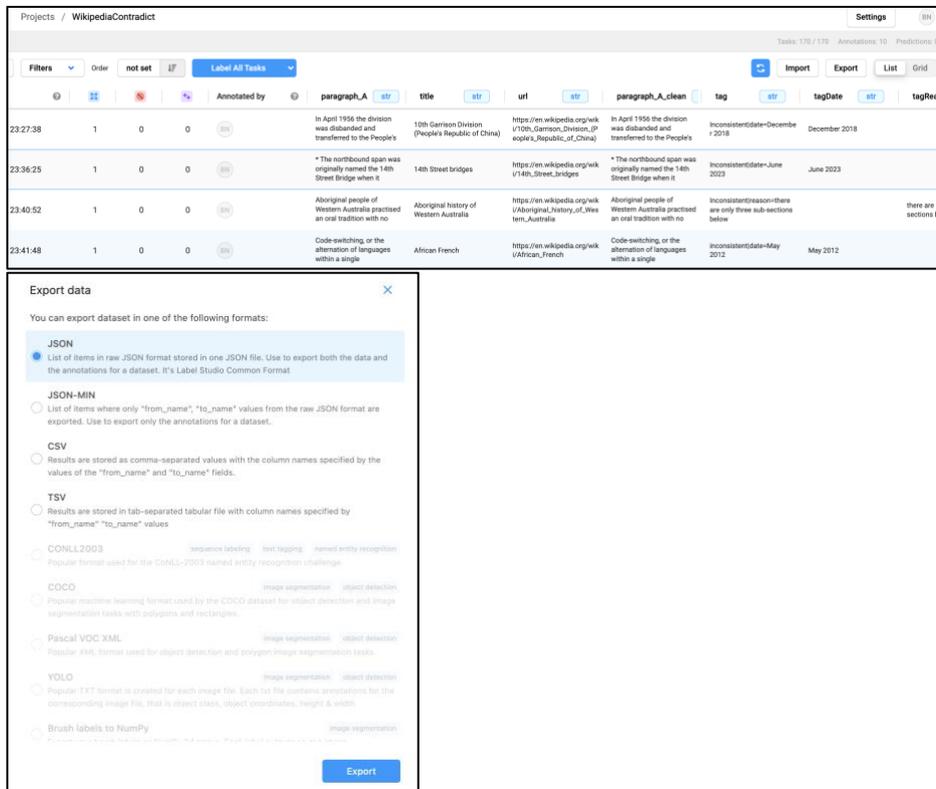


Fig 28: Export annotations