



# ArguMentor Usage Guide

CS 410 Final Project - Software Usage Presentation



# ArguMentor Overview

- Trained model that takes an argumentative essay as input and segments it
- Classifies each segment as an argumentative element and outputs a list of labels that represent which element every word belongs to

INPUT TEXT/ESSAY



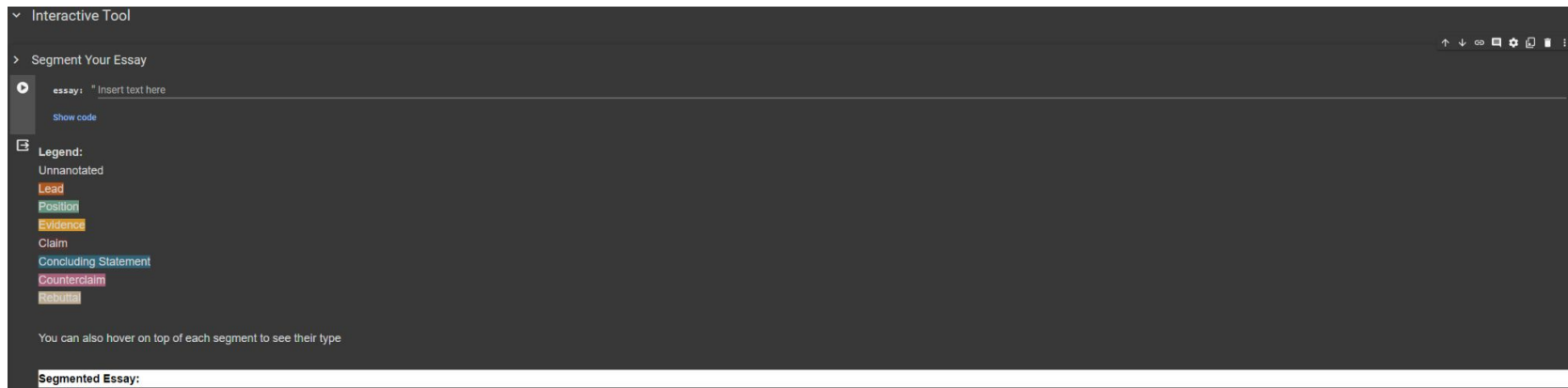
Segmented Essay:

To overcome Hume's problem of induction and derive a theorem that permits learning – and, thus, relies on induction working –, Valiant claims it is necessary to make two assumptions about the world: The Invariance Assumption, and the Learnable Regularity Assumption. The first – the Invariance Assumption – assumes that the context in which a certain generalization is used to make predictions cannot be different that in which this generalization was drawn. This should make intuitive sense and, in a similar way to Hume's Uniformity Principle, assumes that the universe is consistent and uniform – so much so that if the context (or conditions) is the same, it is possible to use previously noticed patterns to make predictions about the world with relative confidence. The second – the Learnable Regularity Assumption – assumes that objects/things of a same class/category have a few regularities which, when observed over a big-enough sample of such objects, allows one to differentiate this object from others, allowing for categorization. The combination of both these assumptions, then, allows induction to be probably correct and learning to be achievable. From there, then, Valiant derives his theorem that there is a finite number of samples needed to extract such identifying characteristics from a certain category of objects such that the prediction will remain under a certain error margin – and thus, probably correct.



# Interactive Tool

- Loads the trained PyTorch model and highlights different segments from the model output using HTML
- Users can input any text, which the model will infer on, and the tool will return the segmented and classified essay





# Example Result

## Segmented Essay:

During a group project, have you ever asked a group member about adding or replacing something? Or, when you were studying for a math test, did you ever ask your parents or sibling about different ways to tackle a certain problem? Asking for other's opinions is especially beneficial as it allows for an individual to receive a variety of different views towards a given topic. Likewise, being diverse and asking many people for their opinions allows one to understand how most people perceive something. This is especially important as knowing multiple opinions can allow someone to take those views into account and sway themselves to the general audience. Knowing different people's opinion can be beneficial in a variety of situations. First and foremost, a great example about how knowing other's opinions is helpful is when someone is making the choice between smoking or refraining from smoking. A student can watch on a TV channel that smoking is bad, and can damage their internal organs. However, on another channel, the student can find advertisements about the most addicting smoking device that can release the most dopamine in the brain, all the while not severely harming people's lungs. This student will receive a variety of different views and opinions on a certain topic, which allows them to make the best educated choice or decision based on how they interpret what they saw. Similarly, a student can be told from his fellow classmates that smoking is fun, joyful, and makes them happy. However, if the student asks a local doctor, they will be informed differently. A doctor will most likely tell them that smoking, although seeming harmless at first, can lead to serious long term consequences. If the student asks both his friends and his doctors, he is able to use his judgemental skills to determine which choice will be best for him in the long run. Furthermore, asking for multiple opinions can benefit during competitions for a position slot, as candidates need to make decisions on what they need to say or do. For example, it can be helpful in situations like elections, both for the U.S. or simply in school. If a student is running for a position in office to represent his/her school, he/she can ask a widespread and diverse audience. First, asking other students is their best bet to obtaining information. Other students can inform him/her about what they want, like better water fountains, recess, or healthier food. Then, the student running can make changes to the way they run for the election, and on his/her speech, take a different approach. In addition, if the student running asks an adult, they will get to know a more realistic way the school can be improved. Since a student, even as a student officer, isn't able to make a significant change to a school, they can inform the school board about ways to make the school better. If someone is running for the president of the United States, a similar approach can be taken. First, they can ask the people, on social media or in speeches, about positive ways to reform our country. After the candidate receives the opinion of general audiences, they can campaign differently to match the view of those voting. All in all, asking for the opinion of multiple different people can set the candidate apart from others. Many people only ask one type of audience for their opinion. Having only one opinion can lead to negative consequences, such as making the wrong choices related to health or education, as only one audience is addressed into making a decision. Therefore, asking multiple different people who have different backgrounds is essential to making the best choices in life. Conclusively, knowing multiple opinions on a certain matter can evidently lead to better results for individuals.

## Legend:

Unannotated

Lead

Position

Evidence

Claim

Concluding Statement

Counterclaim

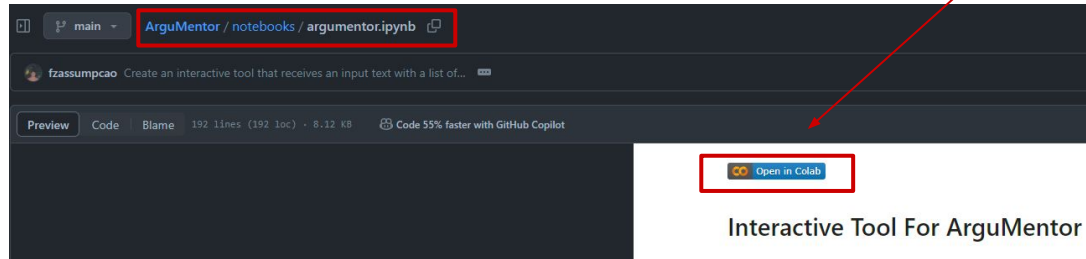
Rebuttal

# Usage + Demo

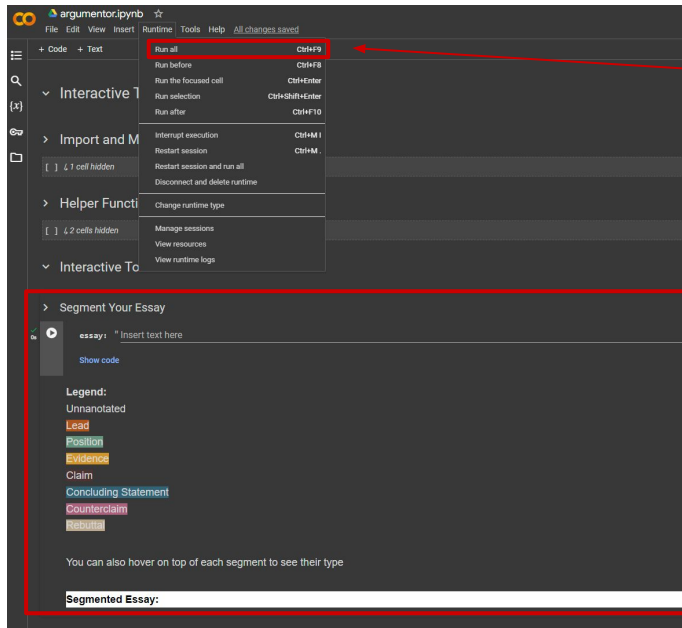
## Interactive Tool

In the repository, find [argumentor.ipynb](#) inside the notebooks folder

Click the “Open in Colab” button



## Usage + Demo (cont.)

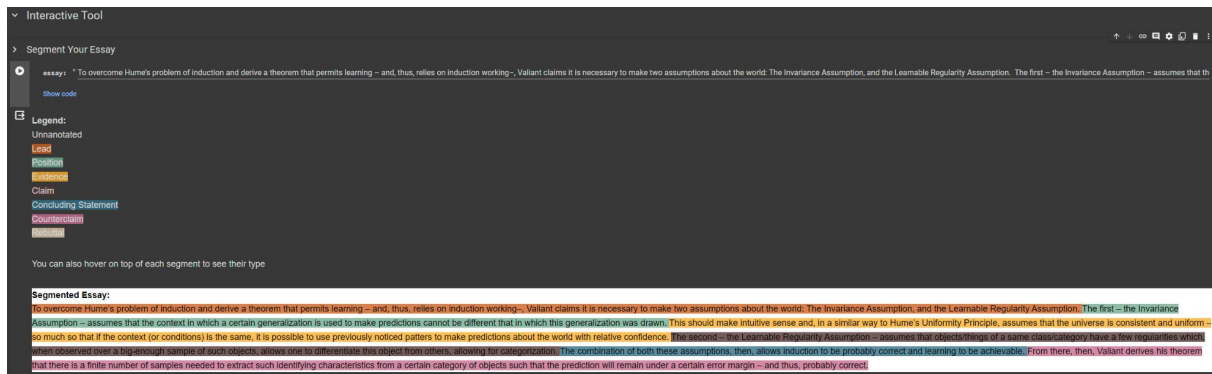


On the top left, click on Runtime and then Run all

After all cells are done executing, you should see this cell all the way at the bottom

# Usage + Demo (cont.)

Input your essay/text and run the cell



The tool will return the essay with different segments/elements highlighted in different colors

If you hover any segment with your mouse, the label/element name will also show up on both sides of the segment:

