

UNIFY DATA TO INFER INSIGHTS USING ARTIFICIAL INTELLIGENCE

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Abstract:It uses human intelligence to do simple tasks such as transcribing text or annotating images and audio annotation to train machine learning algorithms .Unifer.Ai automates tasks for machine learning algorithms, which can be used to improve search results, approve photos or support customers, intelligent personal support and other technology that uses machine learning.

IndexTerms – Text,Image,Audioannotation,Machine Learning algorithms,Tools,Training data.

I. INTRODUCTION

This paper primarily aims at encouraging students to focus on developing applications that not only can they use but also can help the society in general. This way, students will be able to fulfill their responsibility to developing expertise in their preferred subject.

Unifer.Ai platform combines human intelligence to create the highest quality training data for your machine learning projects. You upload your data to our platform and we provide the annotations, judgments, and labels you need to create accurate ground truth for your manually and automated models.

I. Text:

Unifer.Ai powerful human-in-the-loop platform creates ground truth training data for all manner of text and natural language processing (NLP) models.We have solutions for Named Entity Recognition,Sentiment Analysis and Machine Translation

II. Image:

Whether you need simple image categorization or labels on every single pixel, Unifer.Ai can help. Our computer vision solution combines human annotators and smart machine learning models to provide the training data you need to make your computer vision project a success. We support all major labeling plan of action –bounding boxes, lines, polygons and dot tool .

III. Audio:

The appropriation of verbal interfaces, home assistants, and other voice-controlled devices is steadily growing. But creating ground truth data that understands every user is difficult. After all, pronunciation, terminology, background noise, and more can pose serious problems for audio models. Unifer.Ai can help. We can collect audios in dozens of the world’s most spoken languages, validate your model outputs, transcribe audio to text, and more.

Overview of UNIFER.AI

It uses human intelligence to do simple tasks such as transcribing text or detecting images and audio annotation to train machine learning algorithms. Unifer.Ai automates tasks for machine learning algorithms involving with AI , which can be used to improve search results automatically. **Unifer.Ai** platform integrates human intelligence to create the highest quality training data for your AI and machine learning projects. You upload your data to our platform and we provide the annotations, judgments, and labels you need to create accurate ground truth for your manually and automated models.

2.1 Overview of Machine Learning and AI:

Artificial intelligence—A computer system able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

Machine learning— Machine learning is an application of artificial intelligence (AI) that provides systems the capacity to automatically learn and upgrade from experience without being explicitly program me.

Advantages of Machine learning:

1. Easily identifies trends and patterns

Machine Learning can review large volumes of data and discover specific trends and patterns that would not be apparent to humans. For instance, for an e-commerce website like Amazon, it serves to understand the browsing behaviors and purchase histories of its users to help cater to the right products, deals, and reminders relevant to them. It uses the results to reveal relevant advertisements to them.

2. No human intervention needed (automation)

With ML, you don’t need to babysit your project every step of the way. Since it means giving machines the ability to learn, it lets them make predictions and also improve the algorithms on their own. A common example of this is anti-virus softwares;

they learn to filter new threats as they are recognized. ML is also good at recognizing spam.

3. Continuous Improvement

As ML algorithms gain experience, they keep improving in accuracy and efficiency. This lets them make better decisions. Say you need to make a weather forecast model. As the amount of data you have keeps growing, your algorithms learn to make more accurate predictions faster.

4. Handling multi-dimensional and multi-variety data

Machine Learning algorithms are good at handling data that are multi-dimensional and multi-variety, and they can do this in dynamic or uncertain environments.

5. Wide Applications

You could be an e-tailer or a healthcare provider and make ML work for you. Where it does apply, it holds the capability to help deliver a much more personal experience to customers while also targeting the right customers.

Disadvantages of Machine Learning:

With all those advantages to its powerfulness and popularity, Machine Learning isn't perfect. The following factors serve to limit it:

1. Data Acquisition:

Machine Learning requires massive data sets to train on, and these should be inclusive/unbiased, and of good quality. There can also be times where they must wait for new data to be generated.

2. Time and Resources:

ML needs enough time to let the algorithms learn and develop enough to fulfill their purpose with a considerable amount of accuracy and relevancy. It also needs massive resources to function. This can mean additional requirements of computer power for you.

3. Interpretation of Results:

Another major challenge is the ability to accurately interpret results generated by the algorithms. You must also carefully choose the algorithms for your purpose.

4. High error-susceptibility:

Machine Learning is autonomous but highly susceptible to errors. Suppose you train an algorithm with data sets small enough to not be inclusive. You end up with biased predictions coming from a biased training set. This leads to irrelevant advertisements being displayed to customers. In the case of ML, such blunders can set off a chain of errors that can go undetected for long periods of time. And when they do get noticed, it takes quite some time to recognize the source of the issue, and even longer to correct it.

3. Background/Existing System

Although machine learning has been transformative in some fields, machine-learning programs often fail to give expected results. Reasons for this are numerous: lack of (suitable) data, lack of access to the data, data bias, privacy problems, badly chosen tasks and bad algorithms, wrong tools and people, lack of resources, and evaluation problems.

- [1] **Data:** you don't have enough data (or, if meaningful patterns in your data don't exist). Sometimes this can be remedied by introduction of additional data, and sometimes not. For example, if you are trying to model an ancient event, you must use limited ancient data.
- [2] **Model complexity:** the space of models which you can learn is limited to fully model the relationships in the data. Increasing the model complexity is arbitrarily possible with representation learning and neural networks.
- [3] **Compute time:** the available computation resources is not feasible to accurately bring down the training error to reasonable upper bounds. This is limited to the computation resources available, like GPU cycles, and RAM.

4. Proposed System:

4.1 Text:

4.1.1. Sentiment Analysis:

Unifer.Ai provides the accuracy and variation that out-of-the-box sentiment solutions simply cannot. That's because our human-in-the-loop approach allows you to tailor every step of the process to your exact specifications, including going beyond simple sentiment and getting to the "why" behind the positive and negative.

4.1.2. Named Entity Recognition:

Our platform powers highly accurate named entity recognition (NER) tasks with committed tooling and robust quality controls. Whether you're looking to identify parts of speech, classify proper nouns like places and people, or any other important entities for your project, with Unifer.Ai, you create your own custom organization and our platform will take care of the rest.

4.1.3. Machine Translation:

You can categorize any kind of text into sentence pairs. They contain sentences in one language with their translations into another language.

4.2 Image:

4.2.1. Object Detection:

Computer vision projects often need in-image labels. Our object detection solution has tooling for bounding boxes, polygons, and line labels, all with aggregation and quality controls to make sure you get the most demanding, accurate labels possible.

4.2.2.Object tagging:

For images where you need to identify multiple classes and multiple instances of certain objects, our object tagging solution is a great fit. Here, our annotators will select a class from an ontology you create and label each instance according to your instructions. With fully customizable ontologies that support hundreds of classes, you can get your images labeled to your exact specifications.

4.2.3.Video Tracking:

Our video object tracking tool support an collection of machine learning model to label videos up to 100 times faster than human approaches. Human annotators label objects in the first frame and the model persists those annotations, objects as they move through the video, and depend on annotators to simply modify and adapt labels instead of relabeling each object like other solutions in the market.

4.3 Audio:

4.3.1.Transcription from audio:

Understanding audio often requires that audio transformed into written text. Unifer.AI provides free-text translation from audio utterances with a multi-step workflow for maximum accuracy and quality.

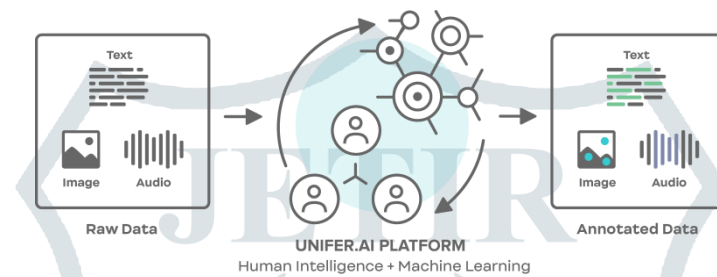


Fig:UNIFER.AI

II. RESULTS AND DISCUSSION

Sentiment analysis:

Unifer.AI provides the accuracy and nuance that out-of-the-box sentiment solutions simply cannot. This Platform provides sentiment Analysis whether it is positive , negative and neutral.

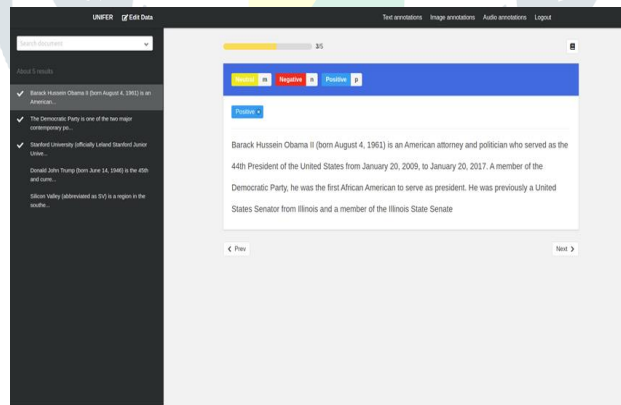
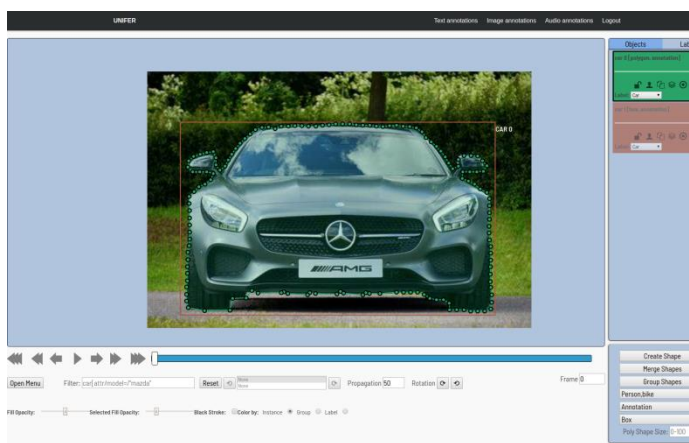


Fig 1:Sentimental Analysis

Object Tagging: Images where you need to identify multiple classes and multiple instances of certain objects, our object tagging solution is a great fit.



Object Detection: Our object detection solution has tooling for bounding boxes, polygons, and line labels, all with aggregation and quality controls

Fig 2: Object Tagging

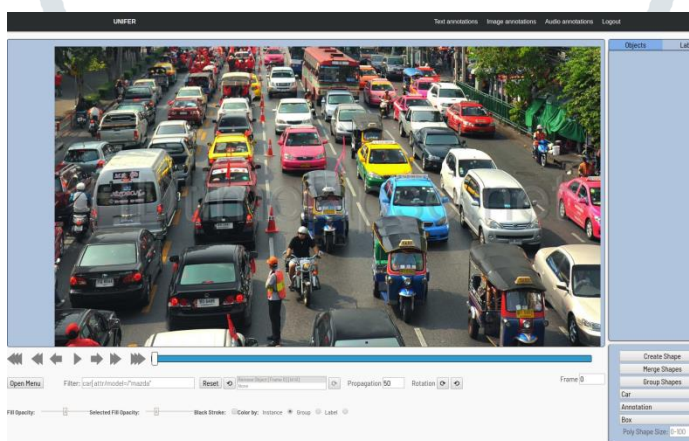


Fig 3: Before Object Detection

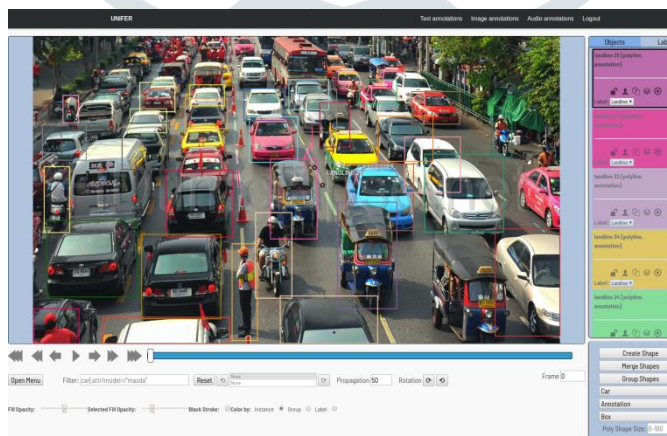


Fig 4: After Object Detection

Video Object Tracking: Our video object tracking tool support an collection of machine learning model to label videos up to 100 times faster than human approaches

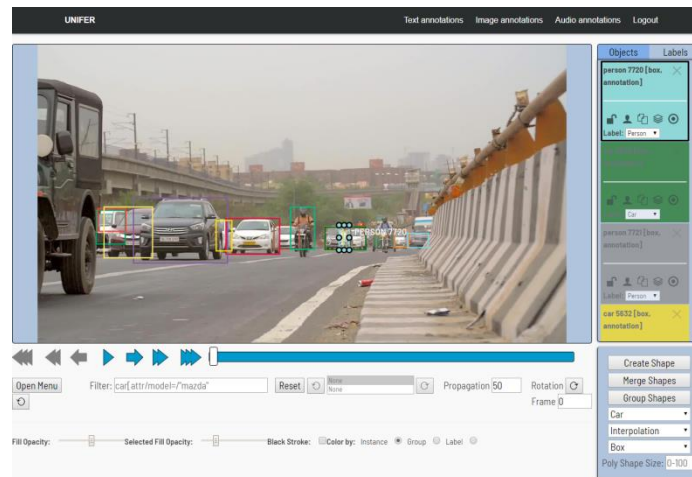


Fig 5: Video Object Detection:

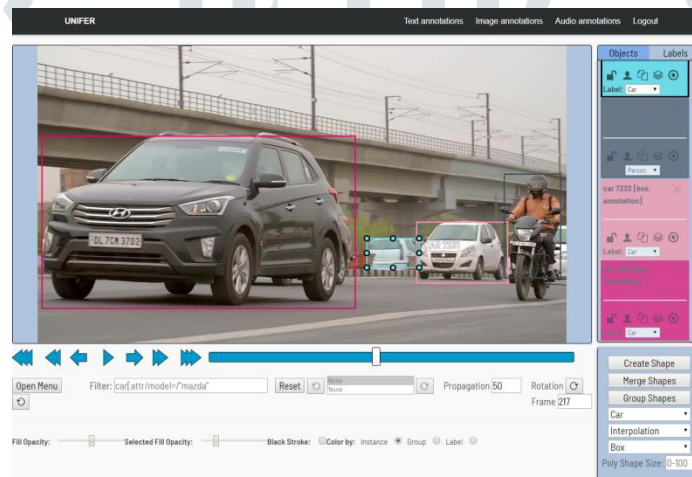


Fig 6: Video Object Detection:

III. CONCLUSION

Unifer.Ai platform combines human intelligence at scale with forefront models to create the highest quality training data for your machine learning (ML) projects. You upload your data to our platform and we provide the annotations, judgments, and labels you need to create accurate ground truth for your models.

IV. ACKNOWLEDGMENT

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