



AI21 Labs Writing Aid, Customizable LLM



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What Is AI21 Labs?

AI21 Labs is an artificial intelligence research and development company whose mission is to reimagine the way that humans read and write through the use of technology such as Large Language Models (LLM) and Natural Language Processors (NLP.) AI21 has proven to be one ChatGPT's biggest competitors. (For more information, please check out our recent articles on a [summary of ChatGPT](#), as well as a [deeper dive into ChatGPT](#).)

What is AI21 Labs good for?

AI21 Labs has a three-component business model that includes Wordtune, Wordtune Read, and AI21Labs Studio.

Wordtune-

AI21's premier product is a writing companion tool that helps rephrase the user's writing. Some of the key components of Wordtune are sentence rephrasing, word suggestions, tone adjustments, fluency enhancement, personalization, and multilingual support.

- Sentence rephrasing: Wordtune can suggest alternative wordings for a sentence, allowing users to convey the same meaning in a clearer or more concise way.
- Word suggestions: The tool can suggest alternative words to use in a

sentence, providing a more diverse vocabulary and helping to avoid repetition.

- **Tone adjustment:** Wordtune can also adjust the tone of the writing, making it more formal or informal, depending on the context.
- **Fluency enhancement:** The tool can suggest changes to writing that improve flow and coherence.
- **Personalization:** Wordtune can learn the writer's style and preferences over time, providing more personalized suggestions.
- **Multilingual support:** Wordtune supports multiple languages, allowing users to write in their preferred language.

Wordtune Read-

Wordtune Read is an AI reader that summarizes long documents aiding in understanding more and faster. Critical features of Wordtune Read include speed reading, customization, vocabulary building, comprehension enhancement, personalization, and multilingual support.

- **Speed reading:** Wordtune Read displays text one word at a time, which aids in improved reading speed.
- **Customization:** The tool allows users to adjust the reading speed, font size, and other settings to suit their preferences and needs.
- **Vocabulary building:** Wordtune Read displays definitions for words that users may not be familiar with, allowing them to expand vocabulary while reading.
- **Comprehension Enhancement:** The tool generates multiple-choice questions based on the text that users have read, helping to test their comprehension and retention.
- **Personalization:** Wordtune Read learns the user's reading level and preferences over time, adjusting the difficulty of the text and the complexity of the questions accordingly.
- **Multilingual support:** Wordtune Read supports multiple languages, allowing users to practice reading in their preferred language.

AI21 Labs Studio

AI21 Labs Studio allows users to build scalable & efficient applications powered by AI21's state-of-the-art language models that can process any language comprehension or generation task. No NLP expertise is needed.

- **Natural Language Processing:** AI21 Labs is particularly proficient in natural language processing (NLP), which can understand and generate human-like text. This technology has been used for various applications such as chatbots, language translation, content creation, and more.
- **Machine Learning:** AI21 Labs also has expertise in machine learning, which is a subset of AI that involves teaching machines to learn from data. They use machine learning algorithms to develop predictive models that can be used for a range of applications such as fraud detection, recommendation engines, and more.
- **Computer Vision:** AI21 Labs has developed computer vision technology that can recognize and interpret images and video. This technology has applications in areas such as security, autonomous vehicles, and medical imaging.
- **Collaboration:** AI21 Labs Studio is designed to facilitate collaboration between developers and data scientists tools for sharing code, data, and models, as well as real-time collaboration features.
- **Customization:** Through AI21 Labs allows users to train a custom model, which will giving the user tailored results and faster performance for specific use cases, without experiencing the gap in training of the current GPT3 model.

More information on Customization of the Jurassic Large Language Model

The most beneficial of these can be seen in the AI21 Labs Studio. This allows you to use Jurassic-1 large-language models to adapt text generation and comprehension.

Steps of how to train a custom model through AI21 Labs:

1. To train a custom model you will need to first build a data set of at least 50 training examples that have both data quality and diversity. (More

information can be found here in [AI21 Labs Documentation on Building a dataset.](#))

2. Once you have your dataset built you can then begin to train your custom model on it. (More information can be found here in [AI21 Labs Documentation on How to Train your custom model based on this dataset.](#))

For more information, please visit the AI21Labs [Quick Start Guide](#).

How does AI21 Labs benefit businesses?

Businesses can benefit from AI21 Labs in numerous ways, depending on the type of tool that is used. For example, Wordtune and Wordtune Read can aid businesses in improving the effectiveness and quality of their internal and external communication. Employees can also use the Wordtune tools to save time, promote consistency, and provide accessibility for people with disabilities or with language barriers.

Most importantly, businesses can benefit from the AI21 Labs Studio as it provides businesses with the ability to customize and scale their LLM products to fit their specific business needs without having NLP experience or expertise.

How does AI21 Labs work?

The AI21Labs three components each work differently and are broken down in detail below.

- **Wordtune**- Wordtune works by using AI and NLP technology to take input from users and provide them with high quality written content.
- **Wordtune Read**- Wordtune Read works similarly to Wordtune, but is focused on reading. Wordtune Read uses AI and MLP technology to aid users in reading and comprehending various materials.
- **AI21Labs Studio**- AI21Labs Studio is a bit more complex than the other two components as it is a platform that allows businesses to build and deploy custom NLP models dependent on their own business needs.

AI21 Labs impacting business –examples (What are public companies doing with AI21 Labs?)

One of the best aspects of AI21 Labs is the versatility of its product. Businesses are using AI21 Labs to create an enormously wide variety of applications. These range from Amazon's hosting of the AI21 Lab's Jurassic-1 foundation model in [Amazon SageMaker](#) to Steam, the popular gaming platform, who is using it to create the synthetically generated video game, [AI Dungeon](#).

This is just scratching the surface. Other companies that use AI21 include Verizon, Databricks, Glassdoor, Samsung, Queque, Jenni, Capgemini, Rapyd, Quora, Ubisoft, Write Label, Lighttricks, Tweet Hunter, and latitude.

Competitor activity

At this moment, none of our top 5 competitors have not announced the utilization of AI21 Labs in their processes or products. This gives us a potential competitive advantage to utilize this technology before others become more aware of its capabilities. It is important to note that most have integrated with some form of AI, which is explained in further detail below.

Avalara

Avalara does not use AI21 Labs, specifically, but they have acquired Indix's AI technology and expertise to expand their tax content database including international product codes and classifications, taxability rules, exemption conditions, tax holidays, jurisdictions, boundaries, tax rates, thresholds, and registration, compliance and return preparation and filing requirements.

Sovos

They mention AI for automation but not many other mentions of artificial intelligence, or any other forms of intelligent agents.

Thomson Reuters

Thomson Reuters has partnered with ModuleQ which maps business insights from large volumes of data and uses intelligent agent technology to engage professionals where they work as it is built into Microsoft 365.

Stripe (TaxJar)

TaxJar does not use AI21Labs but does utilize an artificial intelligence agent, Emmet, for tax categorization. Emmet is an AI tax categorization robot that suggests the products' tax code by evaluating all of TaxJar customers' products. More information can be found in this article about TaxJar and Emmet.

Wolters Kluwer

Wolters Kluwer doesn't use AI21Labs, but they do use AI to provide intelligent invoice LEDES conversions file for e-billing submission.

Potential/in-progress Vertex projects

The two most relatable in-progress and potential projects include Violet, Vertex's librarian chatbot and TaxGPT, TaxCat, and Tax Research Modernization automation projects.

- **TaxCat** – commercial product taxability service that assigns Vertex product taxability codes based on short descriptions of products.
- **Violet**- Violet is an internal librarian ChatBot that finds information in the Emerging Technology Department's documents and brings the information back to the user. Violet works through a simple chat interface that allows users to ask questions and interact, while Violet searches through our SharePoint pages and returns her findings. More information can be found on [Violet's Demo page](#) or on [our SharePoint article repository](#).
- **TaxGPT**- TaxGPT is an idea from the Emerging Technology department for a freemium Chatbot Proof of Concept based on ChatGPT that provides answers to generic tax-related questions. (Note that OpenAI announced its next version of GPT – GPT4 – and introduced its own example by the same name: [TaxGPT](#).) It is important to note that this product concept would also provide a premium version that will be checked by a tax professional. More information can be found in the [Jira Ticket for this item](#).

It is important to note that the versatility of this product means that this could open the doors for many other projects as well as aiding in virtually all of our projects that are already in progress.

Is the AI21 Labs LLM ready for adoption?

Yes, it is adoptable. It has been incorporated into many applications as noted above.

Conclusion

Vertex can benefit from AI21 Labs in numerous ways, depending on which tool is used. The simplest and fastest integration would be Wordtune and Wordtune Read. Vertex could use these to improve the effectiveness and quality of internal and external communications. These can also be used to save time, promote consistency, and provide accessibility for people with disabilities or language barriers.

One of the most beneficial ways that Vertex can benefit from the AI21 Labs Studio would be to customize and scale their LLM products to fit our business needs. Vertex can utilize AI21's AI and NLPs to create a wide variety of applications.

Additionally, as of now, none of our top 5 competitors utilize AI21 Labs in their processes, or products. This provides us with a competitive advantage to utilize this technology before others become more aware of its capabilities.

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