**Text summarization** is the problem of reducing the number of sentences and words of a document without changing its meaning. There are different techniques to extract information from raw text data and use it for a summarization model, overall they can be categorized

as **Extractive**and**Abstractive:-**Extractive methods select the most important sentences within a text (without necessarily understanding the meaning), therefore the result summary is just a subset of the full text. On the contrary, Abstractive models use advanced NLP (i.e. word embeddings) to understand the semantics of the text and generate a meaningful summary. Consequently, Abstractive techniques are much harder to train from scratch as they need a lot of parameters and data.

**Best APIs for Text Summarization**

Now that we’ve discussed what Text Summarization for NLP is and how it works, we’ll compare some of the best Text Summarization APIs, AI summarizers, and [AI Summarization](https://www.assemblyai.com/blog/build-standout-call-coaching-features-ai-summarization/?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&) models to utilize today. Note that some of these APIs support Text Summarization for pre-existing bodies of text, like a research paper, while others perform Text Summarization on top of audio or video stream transcriptions, like from a podcast or virtual meeting.

**1. AssemblyAI’s Summarization Models**

AssemblyAI is a Speech AI company building new AI systems that can understand and process human speech. The company’s [AI models for Summarization](https://www.assemblyai.com/blog/automatically-summarize-audio-and-video-files-at-scale-with-ai/?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&) achieve state-of-the-art results on audio and video. In addition, AssemblyAI has additional Summarization models built for specific industry use cases, including [informative, conversational, and catchy](https://www.assemblyai.com/blog/new-ai-models-to-summarize-audio-and-video-for-any-use-case/?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&). Summaries can be returned as bullets, gist, paragraph, or headline (see example above).

[LeMUR](https://www.assemblyai.com/models/lemur/?ref=assemblyai.com), AssemblyAI’s framework for Large Language Models, can also help product teams process requests for custom summary formats.

In addition, AssemblyAI offers a Summarization model called [Auto Chapters](https://docs.assemblyai.com/audio-intelligence?ref=assemblyai.com#auto-chapters-summarization), which applies Text Summarization on top of the data from an audio or video stream, and supplies a time-stamped one paragraph summary and single sentence headline for each chapter. This process is a unique adaptation of Text Summarization to AssemblyAI.

AssemblyAI's AI models are used by top product teams in podcasts, telephony, virtual meeting platforms, [conversational intelligence AI platforms](https://www.assemblyai.com/blog/what-is-conversational-intelligence-ai/?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&), and more. The company also recently released [Conformer-2](https://www.assemblyai.com/blog/conformer-2/?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&), an AI model for automatic speech recognition trained on 1.1M hours of English audio data, which makes summaries generated from transcriptions first processed with Conformer-2 even more accurate and useful.

Here’s an example of AssemblyAI’s Summarization Model in action using this seven-minute YouTube video discussing [Bias and Variance in Machine Learning](https://www.youtube.com/watch?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&v=nbY2KqXSsaE&t=334s&ref=assemblyai.com).

AssemblyAI's Summarization Model Results:

Bias and Variance Explained

Bias and variants are two of the most important topics when it comes to

data science. This video is brought to you by AssemblyAI and is part of

our Deep Learning Explained series. AssemblyAI is a company that is

making a state of the art speech to text API. You can grab a free API

token using the link in the description.

Models with High Bias

Bias is the amount of assumptions your model makes about the problem it

is trying to solve. Underfitting is when a model is underfitting.

Fitting variants show us the sensitivity of the model on the training

data. High variance means overfitting models with high flexibility tend

to have high variance like decision trees.

Solutions for Model Overfitting

When a model is underfitting or overfitting, the first thing to do is

to train it more or increase the complexity of the model. To deal with

high variance you need to decrease the complexity or introduce more

data to the training. Regularization on the other hand, reduces the

complexity and lowers the variance of a model.

Let’s See You Next Week

Thanks for watching the video. If you liked it, give us a like and

subscribe. We would love to hear about your questions or comments in

the comments section below.

[Test AssemblyAI's Summarization models for Free](https://www.assemblyai.com/playground/?ref=assemblyai.com)

**2. plnia’s Text Summarization API**

The [plnia](https://www.plnia.com/products/text-summarization-api/?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&ref=assemblyai.com) Text Summarization API generates summaries of static documents or other pre-existing bodies of text. In addition to Text Summarization, plnia also offers [Sentiment Analysis](https://www.assemblyai.com/blog/best-apis-for-sentiment-analysis/?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&), Keyword Extractor, Abusive Language Check, and more. Developers wishing to test plnia can sign up for a 10-day free trial; plans that include Text Summarization then start at $19 per month.

**3. Microsoft Azure Text Summarization**

As part of its Text Analytics suite, [Azure](https://docs.microsoft.com/en-us/azure/cognitive-services/language-service/text-summarization/quickstart?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&pivots=programming-language-csharp&ref=assemblyai.com)’s Text Summarization API offers extractive summarization for articles, papers, or documents. Requirements to get started include an Azure subscription and the [Visual Studio IDE](https://visualstudio.microsoft.com/vs/?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&ref=assemblyai.com). Pricing to use the API is pay-as-you-go, though [prices vary](https://azure.microsoft.com/en-us/pricing/details/cognitive-services/language-service/?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&ref=assemblyai.com) depending on usage and other desired features.

**4. MeaningCloud’s Automatic Summarization**

[MeaningCloud](https://www.meaningcloud.com/products/automatic-summarization?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&ref=assemblyai.com)’s Automatic Summarization API lets users summarize the meaning of any document by extracting the most relevant sentences and using these to build a synopsis. The API is multilingual, so users can use the API regardless of the language the text is in. Those looking to test the API must first sign up for a free developer account and then [pricing to use the API](https://www.meaningcloud.com/products/pricinghttps:/www.meaningcloud.com/products/pricing?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&ref=assemblyai.com) ranges from $0-$999+/month, depending on usage.

**5. NLP Cloud Summarization API**

[NLP Cloud](https://nlpcloud.io/nlp-text-summarization-api.html?utm_source=newsletter&utm_medium=email&utm_campaign=sep29&ref=assemblyai.com)offers several text understanding and NLP APIs, including Text Summarization, in addition to supporting fine-tuning and deploying of community AI models to boost accuracy further. Developers can also build their own custom models and train and deploy them into production. Pricing ranges from $0-$499/month, depending on usage.