

DeepFakeAI

A Web-Based DeepFake Service for All

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Abstract

DeepFakeAI aims to grant anyone access to the power of deepfake technology, utilizing the blockchain to create a robust, cloud-based service that can quickly generate clips according to its users' desires. These clips are generated through text submitted by the user and a selected "Character" on the site, which can be one of the pre-selected characters curated by the service or a character generated through a user's own video and audio data. Available through a web app, web API or telegram bot, the service allows the generation of as many clips as users require.

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Background

AI generated video clips created through deep learning, or *deepfakes* as they're commonly known, have become widely recognized as a formidable technology in our current world. Anyone can generate clips so long as they have a powerful computer, several hours to train and refine a model, several more hours to render generated clips and the money to foot the power bill. These requirements create a high barrier to entry, and although some services exist to create or alter images, generate audio, and even synthesize new clips, the process is often unpredictable, expensive, time intensive or a some combination of these three issues.

If a person wanted to create a clip of a person saying their chosen phrase, they would need to use a combination of the above services, then bring these individual elements together using video editing software and a deft hand. In an age where deepfakes are so present in the public consciousness, it is still considerably difficult to create a convincing video clip.

Enter DeepFakeAI: A One Stop Service for Deepfakes

DeepFakeAI is a service which implements deep learning strategies to create fake video clips of various "Characters" as determined by text input given by the user. These "Characters" can be chosen from the ever-expanding list curated by the DeepFakeAI team, which are trained for long periods of time and produce the highest quality clips available, or can be generated from user provided video and audio data to emulate any person the user would like. This data is put through the same deep learning algorithm as the curated "Characters", but due to varied user input a perfect outcome cannot always be guaranteed. With proper input however, a high quality "Character" can be generated and clips can be produced quickly and easily.

Use-Cases for DeepFakeAI Clips

Promotion

With the ability to generate clips of any number of people promoting a product, it is easy to imagine the plethora of possibilities when marketing that utilise the service. For instance, DeepFakeAI itself has used the clip generation process to promote itself to great effect, increasing it's popularity many times over through social media engagement and video clips¹. It can also save resources during the production of promotional materials, as actors do not need to be hired for the creation of advertisements.

Entertainment

DeepFakeAI's most common use-case is the creation of clips purely for entertainment's sake. These clips can be generated as jokes, used to spread a message in a humorous way, or even as announcements on platforms such as Discord servers or social media sites. So long as the use-case follows existing laws and regulations on computer generated content, the clips are free to be used in any capacity the user may desire.

The Generative Process

The generative process can be broken down into the **Character Selection Process**, **Clip Generation**, and the lip sync process, which can either use the standard lip sync process as a part of clip generation, or an enhanced **HD Lip Sync** process, which can enhance the end product. Each step has been carefully planned to create the highest quality clips possible in a reasonable amount of time, and the DeepFakeAI team is constantly working on improving each and every aspect of the process.

¹DeepFakeAI does not condone the use of the product to imitate real people without clarification and clear disclosure that clips are generated using a deepfake service.

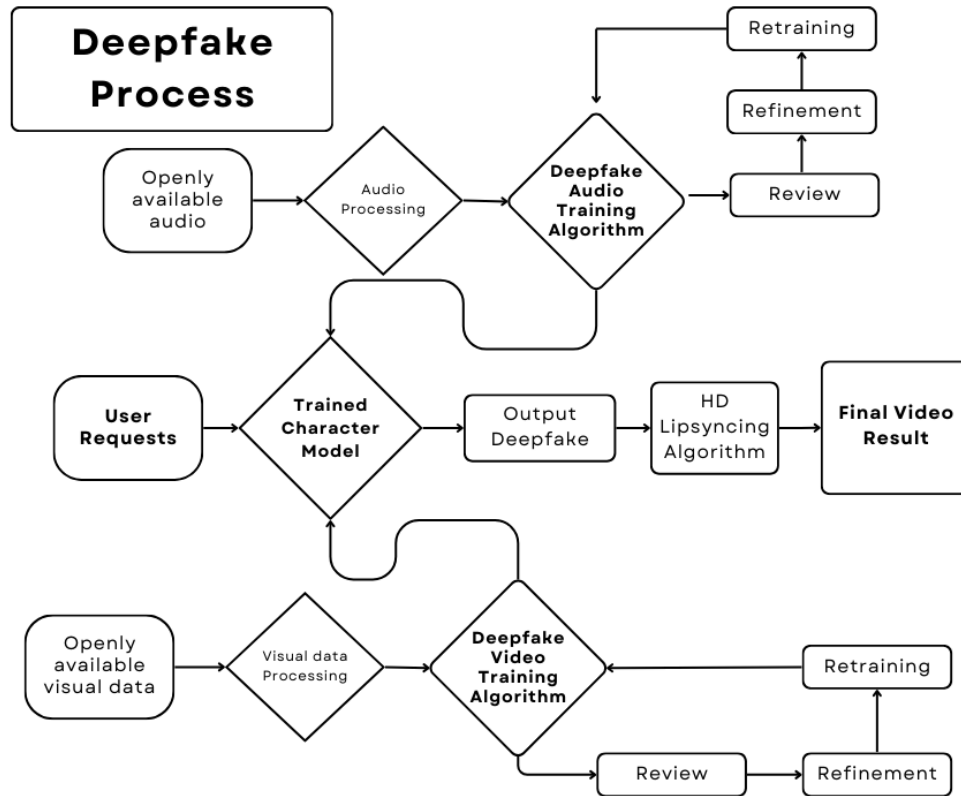


Figure 1: The Character creation and deepfaking process for curated characters

Character Selection

First, the user must select a character. These can be the pre-generated Characters that the DeepFakeAI team has created, or can be a user-generated character that the user uploads video and audio data to create.

Curated Characters

The curated Character list created by the DeepFakeAI team contains a wide variety of characters, the ever-expanding list of which can be found proudly displayed on the DeepFakeAI website². These Characters are generated by the team using the process shown in Figure 1, and the deep learning is referred to therein as the "Deepfake Audio Training Algorithm" and the "Deepfake Video Training Algorithm". Both visual and auditory data is extracted from publicly available footage, but each are carefully edited as two separate inputs to reduce unwanted bad data. The key to the quality of these curated characters is in the Review, Refinement and Retraining process, wherein the DeepFakeAI team tweak variables and monitor the deep learning progress throughout it's development. By removing all unwanted noise and other speakers, the end product is clean and clear for use in the clip generation process.

User-Generated Characters

User-Generated Characters are created in a similar fashion, but go through a faster and more automated training process to ensure quick product turnaround for users. They are then used to create clips for that user, and allow more individualized results for those who may want it. The quality is still high, but depends much more on user input data and is limited by the quality of video and audio

²<https://fakeai.io>

provided. The data can be given by uploading 1 minute or less video footage of the desired Character and some audio, which is then processed in the same manner described above. There is then a training period, and you can submit your email to be notified when the training is complete³.

Clip Generation

Once a Character is selected, the clip generation process can begin. The user inputs a message to their chosen interface, whether it be the web app, web API, or Telegram bot (See "Using the Service" for more details). The input message is then fed into the trained Character model, which processes the message into a video clip using generative AI processing based on the Character model. The output is a realistic video clip including the Character moving and speaking in front of a background, and audio that is synchronized with the visuals which match up with the input message. This deepfaked clip is the main output from the deep learning model.

HD Lip-syncing

While the initial output from the deep learning model is more than sufficient for many purposes, the DeepFakeAI team has developed a more advanced **HD Lipsyncing Algorithm** that uses further processing to greatly improve the quality of mouth movements, expressions, and synchronization with the generated audio. By implementing this optional algorithm, the clips generated appear very realistic, and can be viewed in higher quality settings without suffering reduced believability. For an example, see DeepFakeAI's HD Lipsync Model Demo⁴. Users can choose whether to use this model or not in their clip creation menu.

By utilizing the above processes, DeepFakeAI produces high-quality clips in an efficient manner regardless of the message or Character chosen.

Accessing the Service

DeepFakeAI can be accessed in three main ways: the web app, the web API, and the Telegram Bot. Each provides a different user experience tailored to its specific platform. All of the above methods are mediated through the web portal at <https://fakeai.io>, which allows all of the tools for DeepFakeAI to be conveniently stored in one place.

The Web App

The web app is the main method through which users can access DeepFakeAI for direct clip generation⁵. Through this web app, users can validate their email address with the site and create an account, which will allow access to all aspects of the service. This includes purchasing minutes, linking a Telegram Account to use the Telegram Bot, generating clips, accessing previous generation history, generating API keys to use the web API, and accessing a history of previous transactions. Most users will want to access the Web App tab, which allows direct clip generation via choosing a Character and entering a prompt. These clips are generated and shown directly in the app, and this process can be accessed either by using minutes purchased by the user or by using videos granted by the tier of the user \$FAKEAI⁶.

The web app can also be used to create custom characters by accessing the Custom tab. Through the Create function, a new character can be created for a fee. Once created, these characters are available to use the same way as any other character. Simply upload video and audio of the character in question, pay the fee, and allow the Character to process. Once done, it is available any time under the List section of the Custom tab. To create your own character, go to custom characters section in the App and enter a new name for your character. Then go to the **List** section and select your character. Upload the video (mp4) and audio (wav/mp3). Once that is done, add a description for your character and save it. Once start processing is selected, you can enter an email to be notified

³For more on accessing the feature, see the Accessing the Service section.

⁴<https://www.youtube.com/watch?v=6QejGbEXYxk>

⁵The web app is available at <https://app.fakeai.io>

⁶See Payment Structure for more details.

once the training process is complete, which may take a few hours. Once completed, your character is ready for use in clip creation.

The Web API

The Web API is an additional method through which the service can be accessed, an API which can be embedded in a user's website to grant access to the service directly for visitors. The Web API works very similarly to the web app functionality described above, and can be available for users to access freely on the website, or in a monetized fashion⁷.

The Telegram Bot

The Telegram Bot works slightly differently than the above methods, as it is managed through the web portal, but accessed through the app Telegram. Users in a Telegram group which contains the DeepFakeAI bot can use text commands such as /say or /ask to generate clips through the bot once they have purchased minutes through the web portal and linked their Telegram account. The bot can also be added to a server by purchasing Developer Minutes, and these developer minutes can either be used by the purchaser, or enable users in that Telegram group to use the bot as long as minutes are available.

Payment Structure

As a service with no outside advertisements available or sponsors to listen to, DeepFakeAI is able to deliver clips without any outside interference or data sharing whatsoever. Because of this, the service requires funding for further development, maintenance costs, and the base cost of hosting the service into perpetuity. As such, the service is paid, and can be accessed through either holding the corollary token \$FakeAI, or by purchasing minutes directly on the web portal.

Using Minutes

Purchasing minutes is the most common way to use DeepFakeAI, which can be done through the web portal. Users must be signed up and logged into the website before using the service.

If the use of fiat currency is desired, users can sign in using their email, the Google API, or the X API. Once logged in, users must go to the "Buy" tab of the dashboard, which can be found at app.fakeai.io. Then, the user can select either User or Developer minutes, and choose how many minutes they would like to purchase (More information on the difference between User and Developer minutes can be found below). Once the desired type and amount of minutes have been selected, the user select the "Buy" option, which will redirect them to a Stripe checkout page. Here, payment information can be filled out, and once the payment has processed the user will have the purchased minutes available for use.

Alternatively, if the user wishes to use cryptocurrency, they can log in using their MetaMask wallet. Once this is done, users can follow the same process described above, however instead of being redirected to a Stripe checkout page, the currency will be pulled directly from the selected wallet upon purchase.

User vs Developer Minutes

Users can purchase **User Minutes** or **Developer Minutes**, with a few key differences between the two options:

⁷All clips must still be paid for either by using the videos granted by the tier of the user or by using Developer Minutes, for more information see the section on Payment Structure.

User Minutes		Developer Minutes	
\$2 per minute		\$3 per minute	
Web App Access	✓	Web App Access	✓
Telegram Bot Access	✓	Telegram Bot Access	✓
Add Telegram Bot to Server	✗	Add Telegram Bot to Server	✓
Web API Access	✗	Web API Access	✓

Custom Characters

Custom characters can be created for a fee, and can be paid for using either cryptocurrency or fiat currency using the same process as the minutes purchasing above. Simply select the dollar sign by the Custom Character's name in the Custom tab to access the checkout page. Once paid for, the character can be trained. Once training is complete you will be notified via email. Once trained, the character can be used just like any other, and can be viewed and managed under the List portion of the Custom tab.

Holding \$FakeAI

Cryptocurrency users can also access the service by holding a certain number of \$FakeAI tokens. This gains access to certain tiers of use, all of which give the user access to the same options as the Developer Minutes. The uses include the following for each tier:

Tier Structure

- **Tier 1:** 50,000 - 99,999 tokens
 - 1 video per day
- **Tier 2:** 100,000 - 199,999 tokens
 - 2 videos per day
- **Tier 3:** 200,000 - 299,999 tokens
 - 3 videos per day
- **Tier 4:** 300,000 - 499,999 tokens
 - 4 videos per day
- **Tier 5:** 500,000 - 999,999 tokens
 - 8 videos per day
- **Tier 6:** 1,000,000+ tokens
 - Unlimited videos

All tiered options require locking the tokens for at least 24 hours to be used, after which the benefits are available so long as the tokens continue to be held.

Road-map

The current road-map for DeepFakeAI is the following as of the writing of this whitepaper:

- Improved deepfake quality through continued training and refinement of the deep learning algorithms and processes
- Further optimizations to ease of use and efficiency of the web app, web API and Telegram bot
- Introduction of the DeepFakeAI bot to new platforms, to expand use-cases across multiple social media sites
- Continued expansion of the Character pool with input from the DeepFakeAI community
- Improvement of the custom Character option through further refinement of the automated Character creation process and custom refinement for video and audio
- Access to HD options for Custom Characters
- An "Explore" tab, which will allow users to explore other user's Custom Characters
- Free Character creation for holders of \$FAKEAI
- A new "Zero Shot" model, which will reduce cost, amount of audio data required and training time significantly for custom characters alike using a new audio training process. These savings will be passed on to the users as lower cost and time to use the service.

These objectives continue to drive the DeepFakeAI team to improve the service, and there is no limit to the possibilities in the future.

Summary

DeepFakeAI as a service has revolutionized the easy creation of deepfaked clips, allowing users to generate any desired clip with minimal effort at low cost. The technology is sound, the team is working hard on improvements, and the output is clean, high definition video available for whatever use-case can be imagined. It lowers the high barrier of entry to this powerful technology, and the customization options are unrivaled by other competing services. All that is required is a computer, an internet connection, and an idea to start creating.