

LINGUAVOX

LINGUistic **A**udio-**V**isual **O**verlap
e**X**perience

DOCUART

DOCUment **ART**ification

Team II Hackathoners



A large, light gray, stylized graphic of a human head in profile, facing right. Inside the head, there are several interlocking gears and circuit-like lines with circular nodes, suggesting a theme of technology, artificial intelligence, or cognitive processes.

DOCUART

<https://youtu.be/pyusrSciwv8>

MINDEF/SAF Use Cases for DOCUART

Pain Points:

- Wordy documents are often dry and time-consuming to read
- Preparation of graphical materials can be time consuming

Capabilities: A Document to Style-Controlled Art Generator

- Generate user-controlled styled graphical art (i.e. comics and more)
- Convey information of documents through art for greater palatability

Use Cases:

- Advertising and Marketing
- Communications

Steps to use DOCUART

1. Select and upload a PDF document
2. Select number of images to be generated
3. Select style of images to be generated
4. Click on "submit"
5. View or download images. Each images will take about 30 seconds to be generated

Step 1: Select and upload PDF document

Step 2: Select number of images to be generated

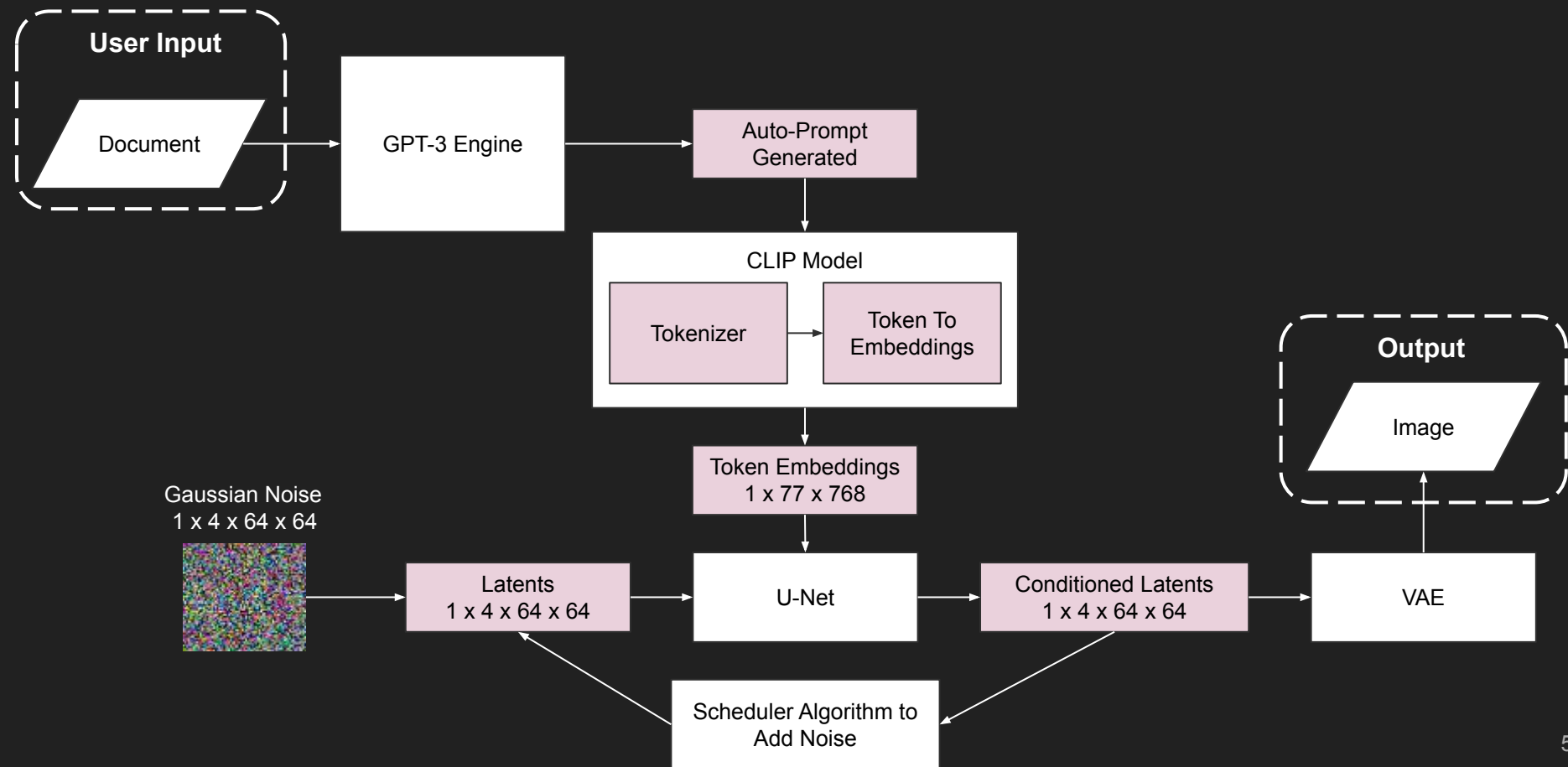
Step 3: Select style of images to be generated

Step 4: Click on "Submit"

Step 5: View or download images

The screenshot shows the DOCUART web interface. At the top, it says 'DOCUART' and a disclaimer: 'Please do not upload classified or sensitive information. Users are responsible for the use of outputs'. Below this is a section for 'Upload your PDF file here'. To the right of this is a text input field for 'output 0' with the prompt 'Use Cartoon style. Generate an image of a Singaporean soldier in a modern military setting.' Below the upload section is a slider for 'Number_of_Images' set to 2. To the right of the slider is a dropdown menu for 'Artistic_Style' set to 'Cartoon'. Below these are two buttons: 'Clear' and 'Submit'. To the right of the 'Submit' button is a preview area showing 'output 1' with a cartoon illustration of three Singaporean soldiers in modern military uniforms.

DOCUART: Multi-Modal State-of-the-Art AI Architecture



Comparison of Prompts Generated by Different Methods

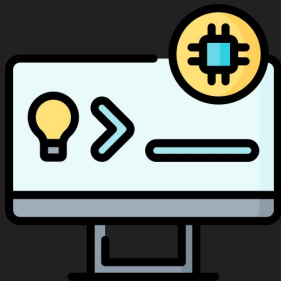
Ranking	Methods	Generated Prompts
1	Extractive Summary (TFIDF + Cosine Similarity)	<pre>["SINGAPORE - MILITARY This article describes Singapore's military and the military relationships it has formed with other nations.", 'Military Capability The Singapore Armed Forces (SAF) is the military component of the Ministry of Defence (MINDEF) of the Republic of Singapore.',</pre>
2	GPT-3 (davinci)	<pre>'Generate an image of a Singapore Armed Forces (SAF) soldier in uniform.', 'Generate an image of a Singaporean defence minister.',</pre>
3	Abstractive Summary (PEGASUS)	<pre>'Create exactly 5 prompts for an image generation AI based on the following text listed in 5 bullet points Do not say anything else at all SINGAPORE MILITARY This article describes Singapore s military and the military relationships it has formed with other nations Military Capability The Singapore Armed Forces SAF is the military component of the Ministry of Defence MINDEF of the Republic of Singapore</pre>
4	Dolly	<pre>To locate the source of a fire, first check the following: 1. Building codes and rules: make sure that the structure has an electrical 2. Weather: check for lightning and unseasonably warm or cold weather.</pre>
5	GPT-2	<pre>"Singapore is one of the world's most densely populated countries, with a population of more than four million people.", 'The Singapore Armed Forces (SAF) is the military component of the Ministry of Defence (MIN) of the Republic of Singapore.'</pre>



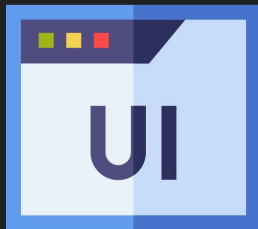
DOCUART Demo

View the demo here: <https://youtu.be/pyusrSciwv8>

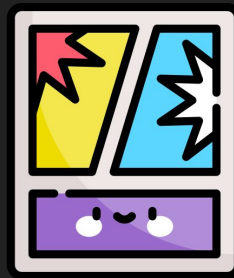
Future Works for DOCUART



Improve prompt
generation to feed
into Stable Diffusion
model



Improve the UI for the web
application



Explore synchronising look
and feel for multiple image
generation for chaining
into comic strips