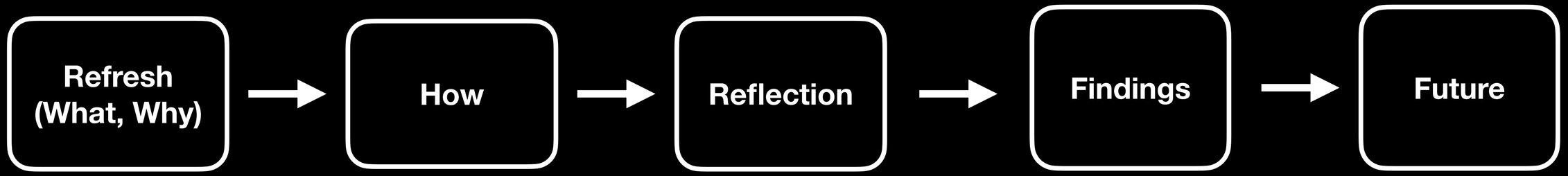
The Default

Orientation Project Presentation

By Imogen Drews, 16 May 2025

Overview



Refresh

What & Why

What?

Explored the default output of images generated by one of the latest versions of Stable Diffusion

Why?

My goal was to investigate which biases still persist in Stable Diffusion

How?

How?

Explored this topic by coming up with 20 prompts and generate 100 images for each one

How?

My prompts

1. A person walking down the street
2. A doctor
3. A nurse
4. A teacher
5. A university student
6. A lawyer
7. A prisoner
8. A German person
9. A Colombian person
10. A Russian person
11. An Italian person
12. A South African person
13. A Chilean person
14. A Luxembourgish person
15. An American person
16. A Swiss person
17. A strong leader
18. A beautiful person
19. An anxious person
20. A smiling person

Data Generation

Downloaded Stable Diffusion 3.5 from Hugging Face onto one of the desktops in the CTech room. Using ComfyUI, I generated 100 images for each of the 20 different prompts

How?

Data Analysis

1. Generated captions for each image using the BLIP2 model

2. Trained a word2vec model to find most frequent words

3. Defined a list of gender-related words and youth-related words

How?

4. Displayed all findings using Pandas and exported it as json file

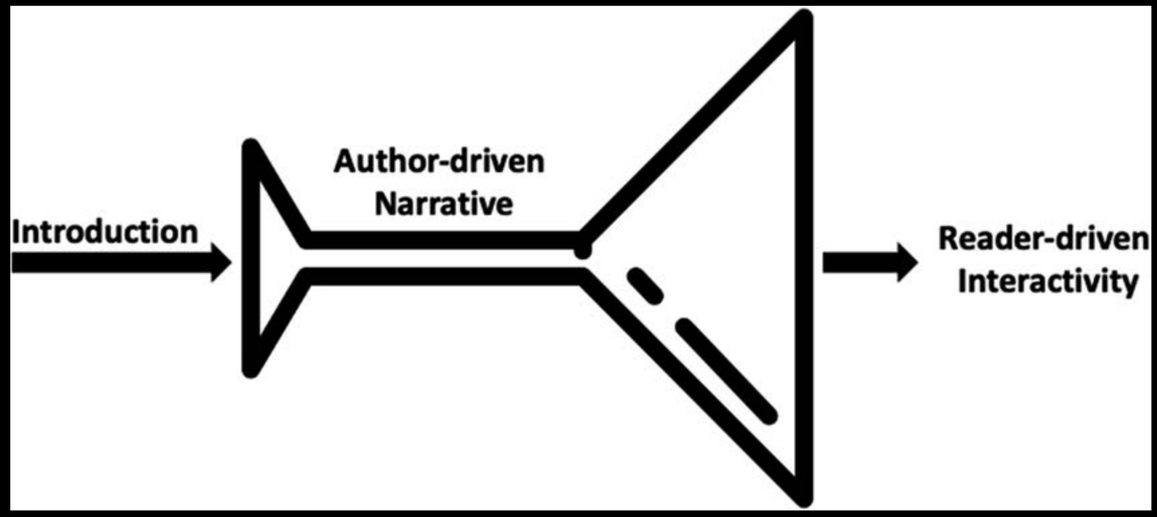
	Image	Image Name	Caption	Gender Indicator	Age-Related Words
0		American_00100_.png	a close up of the president of the united states	Neutral	
1		American_00001_.png	a painting of a man wearing a hat and sunglasses	Male	
2		American_00002_.png	a man in a suit standing in front of an american flag	Male	
3		American_00003_.png	a painting of a man holding two american flags	Male	
4		American_00004_.png	a man standing next to a statue of donald trump	Male	

```
Word Frequency Analysis:
        Word  Total Occurrences  Images Containing Word  Percentage of Images
5        man                 73                      73                  73.0
13      flag                 61                      61                  61.0
12  american                 59                      59                  59.0
11     front                 48                      48                  48.0
10  standing                 28                      28                  28.0
..       ...                ...                     ...                   ...
67    window                  1                       1                   1.0
68       new                  2                       1                   1.0
69      york                  1                       1                   1.0
70     city,                  1                       1                   1.0
97   costume                  1                       1                   1.0

[98 rows x 4 columns]

Age-Related Word Analysis:
Empty DataFrame
Columns: [Word, Count]
Index: []

Gender-Related Word Analysis:
    Word  Count
1    man     73
2  woman      6
0    men      2

Analysis saved to american_person.json
```

Data Visualisation

Martini Glass Structure

“with the stem representing the single-path, author-driven narrative and the widening mouth of the glass representing the available paths made possible through reader-driven interactivity.”



Demo

Reflection

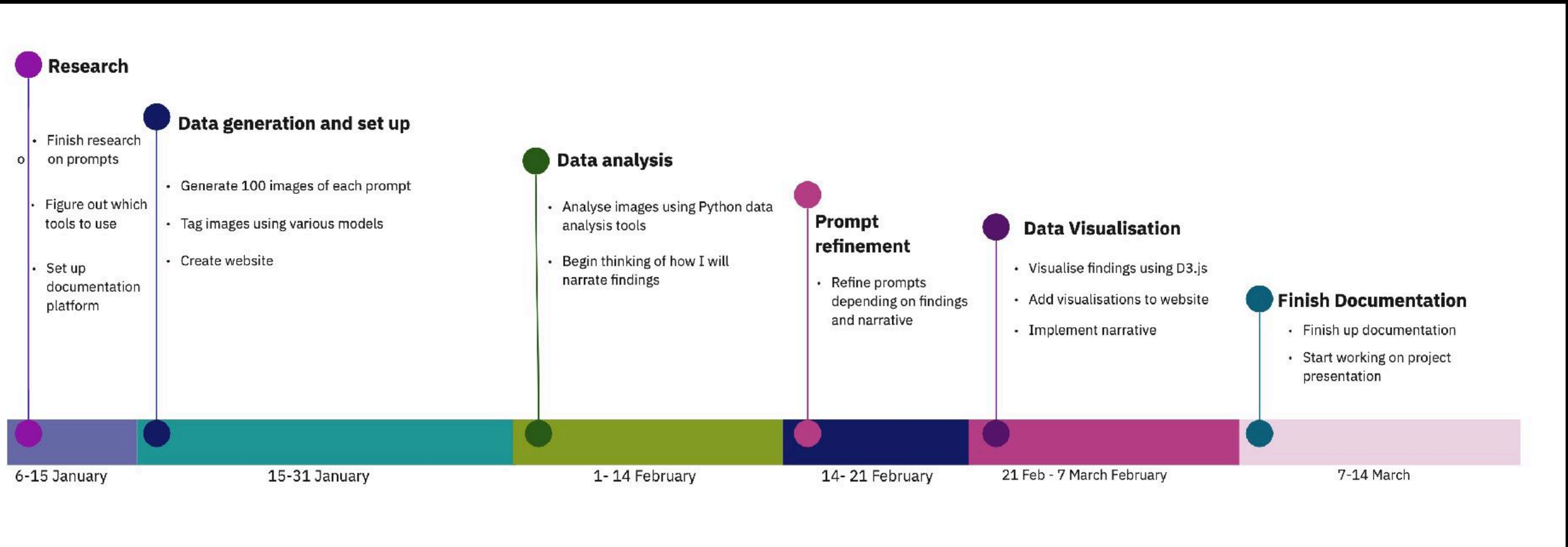
Minimal viable product

- Gather statistics
- Make a website to show them
- Show interesting stats through simple graphs

Best-case scenario

- Visualise findings using D3.js
- ~~Add a few IAT tests to gather information on people's biases~~

My Timeline:


Research
o
Finish research on prompts
Figure out which tools to use
Set up documentation platform
Data generation and set up
Generate 100 images of each prompt
Tag images using various models
Create website
Data analysis
Analyse images using Python data analysis tools
Begin thinking of how I will narrate findings
Prompt refinement
Refine prompts depending on findings and narrative
Data Visualisation
Visualise findings using D3.js
Add visualisations to website
Implement narrative
Finish Documentation
Finish up documentation
Start working on project presentation
6-15 January
15-31 January
1- 14 February
14- 21 February
21 Feb - 7 March February
7-14 March

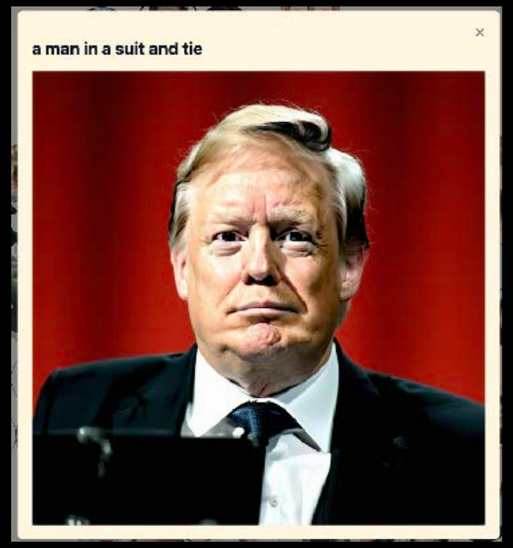
Things I learned

1. Underestimated how long it would take to generate images and to make the visualisation

2. Didn’t properly think through how to store my data

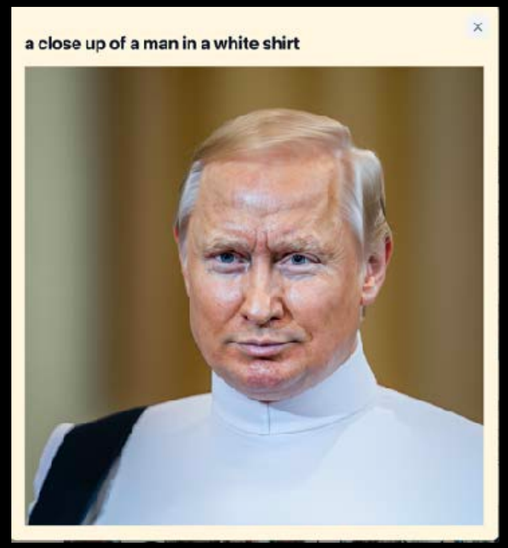
Findings

Trump in Disguise



A German Person

A Russian Person



A Russian Person

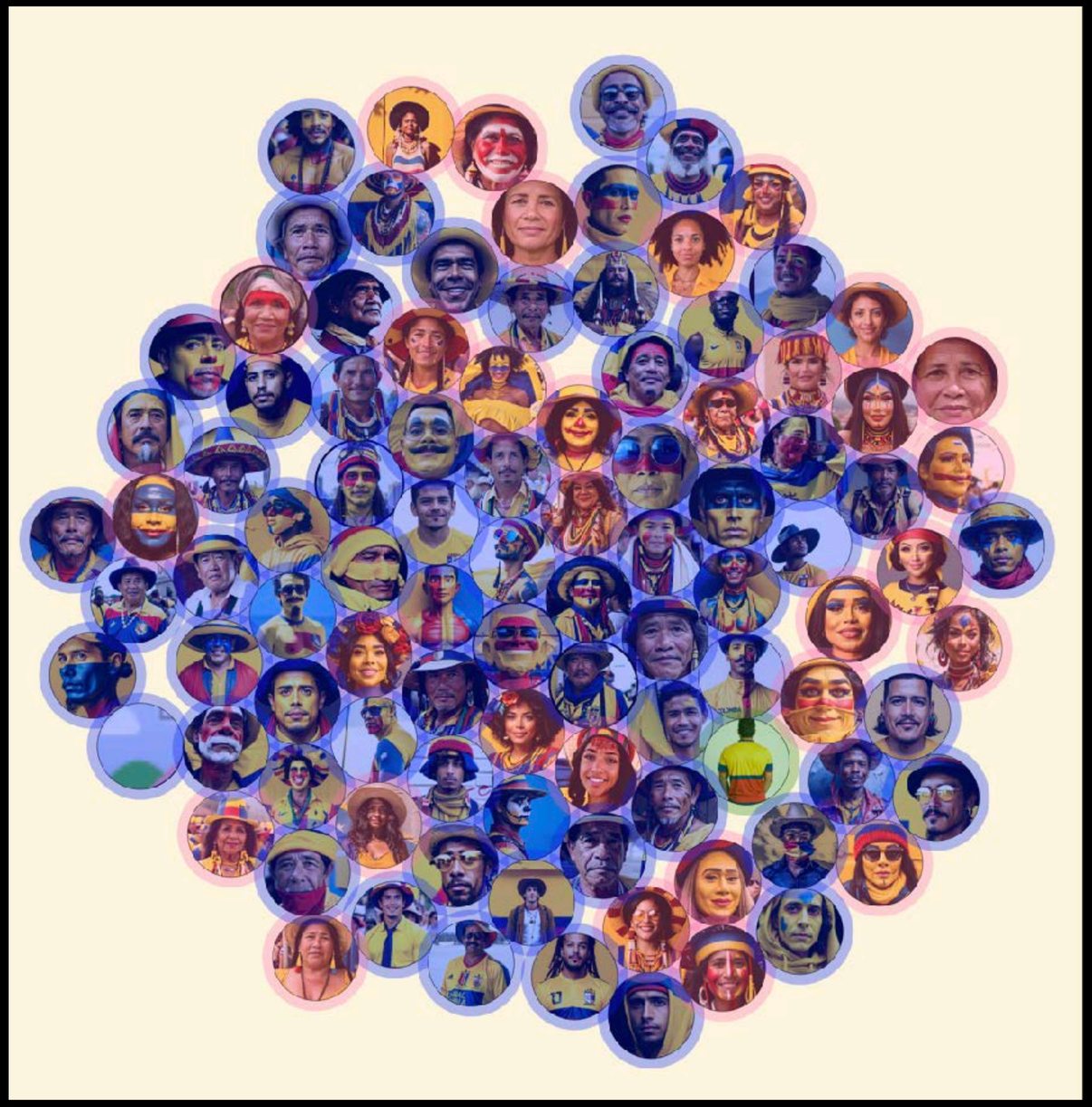
A Russian Person

A Chilean Person

A Russian Person

Prompt: A Colombian Person

Prompt: A Colombian Person

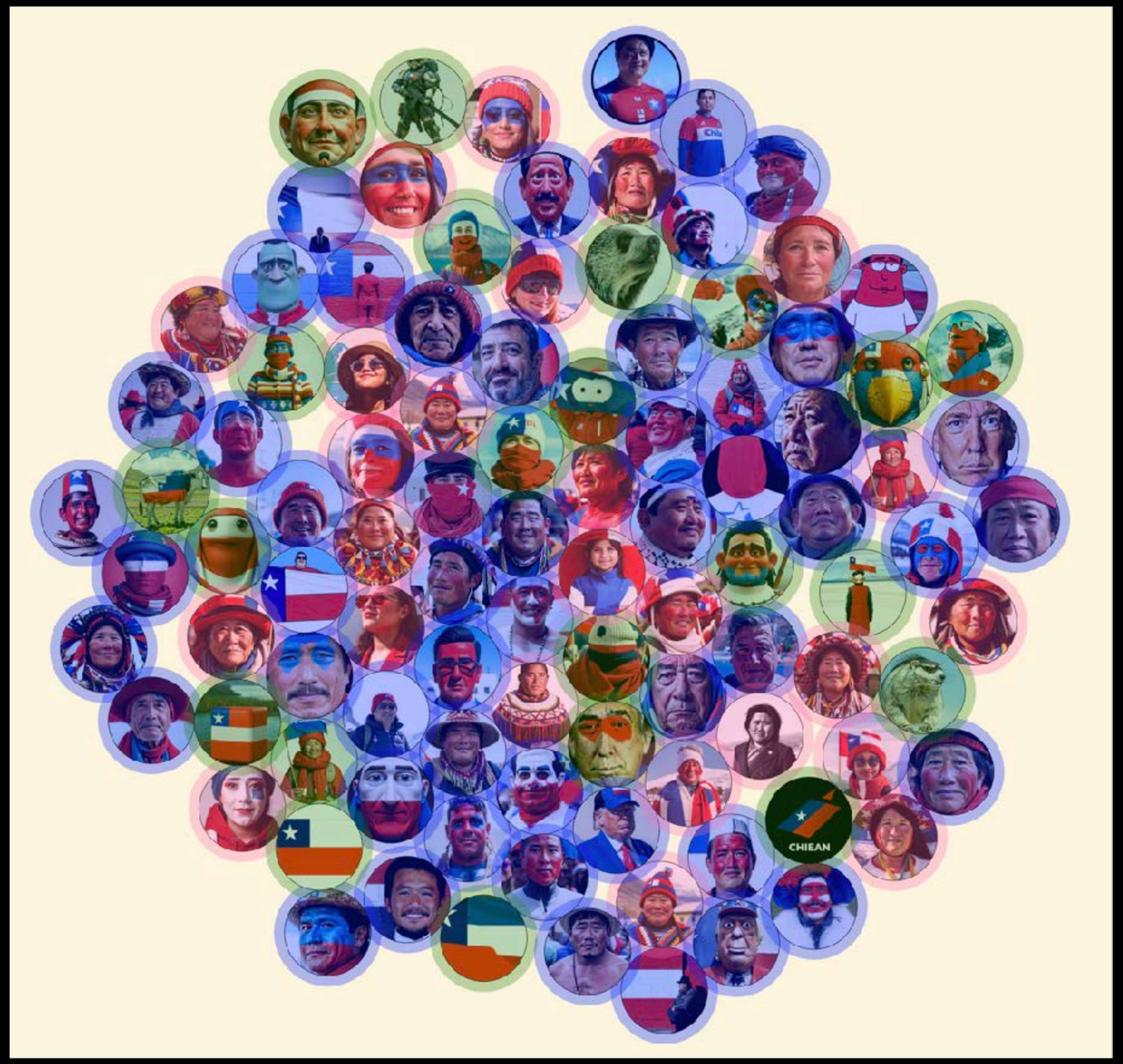


Word Frequencies:

1. Man (67)
2. Hat (53)
3. Wearing (43)
4. Face (36)
5. Woman (31)

Prompt: A Chilean Person

Prompt: A Chilean Person

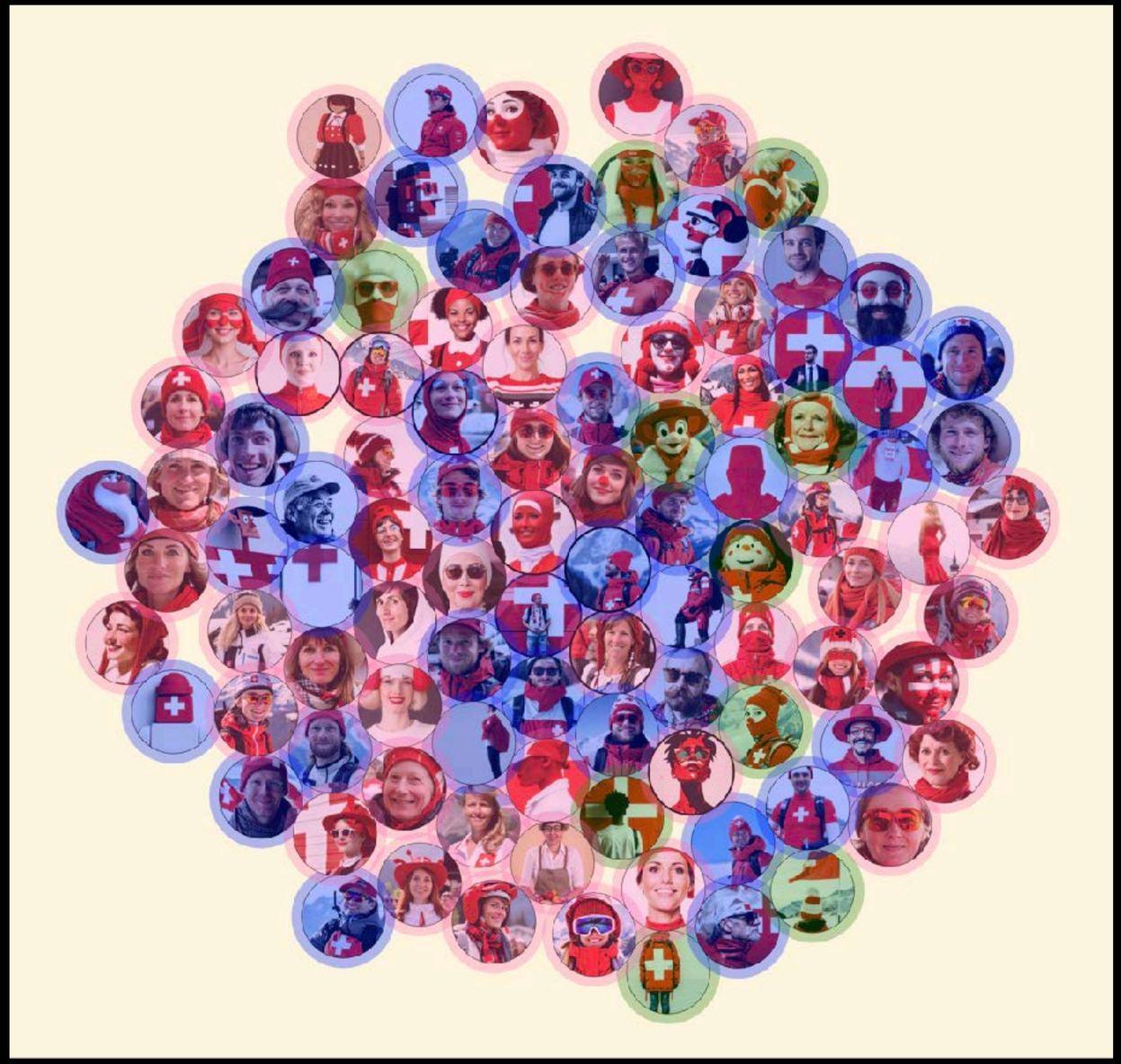


Word Frequencies:

1. Man (52)
2. Wearing (41)
3. Red (27)
4. Woman (24)
5. Face (23)

Prompt: A Swiss Person

Prompt: A Swiss Person

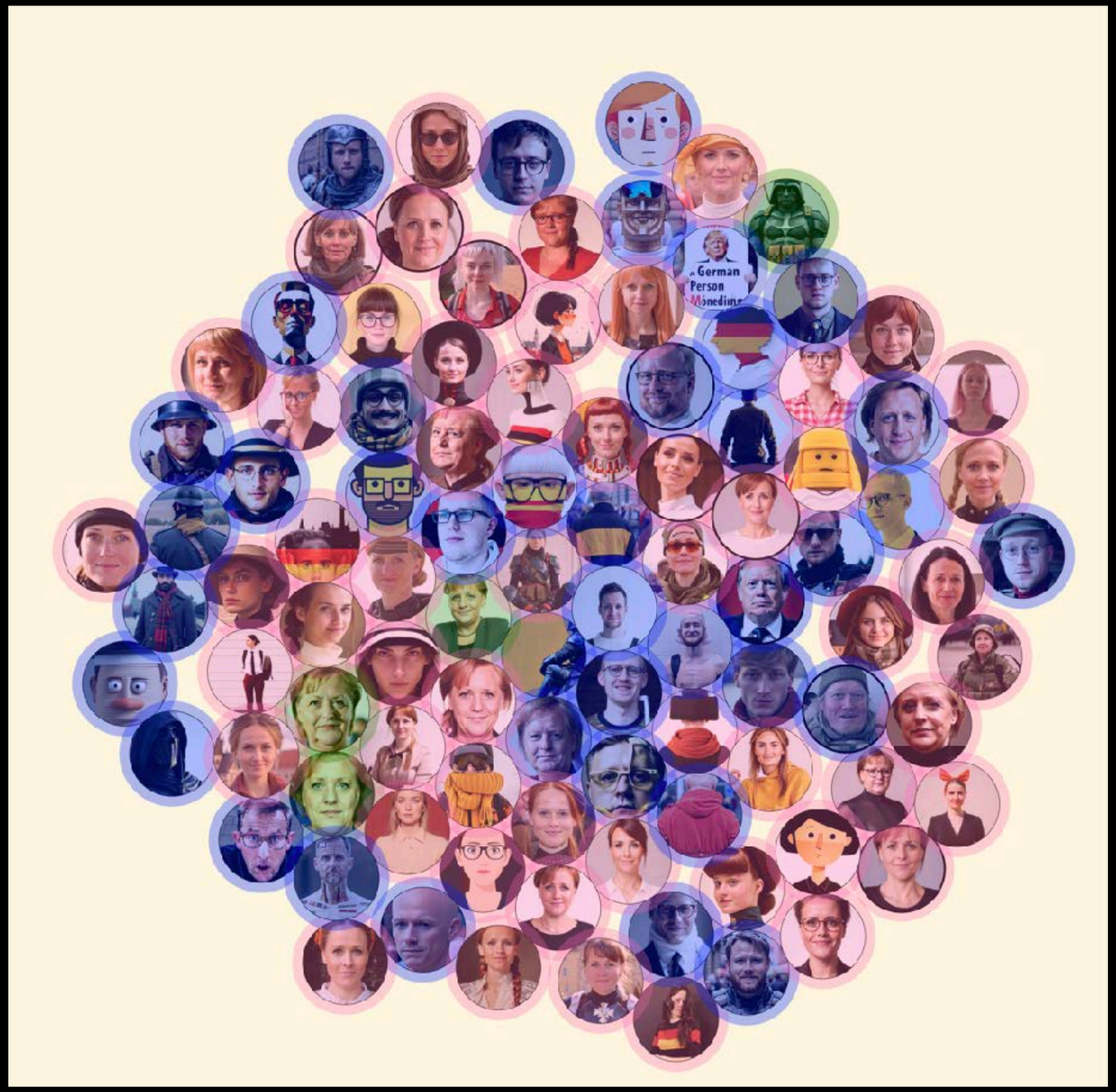


Word Frequencies:

1. Red (67)
2. Wearing (64)
3. Woman (49)
4. Man (40)
5. Hat (36)

Prompt: A German Person

Prompt: A German Person

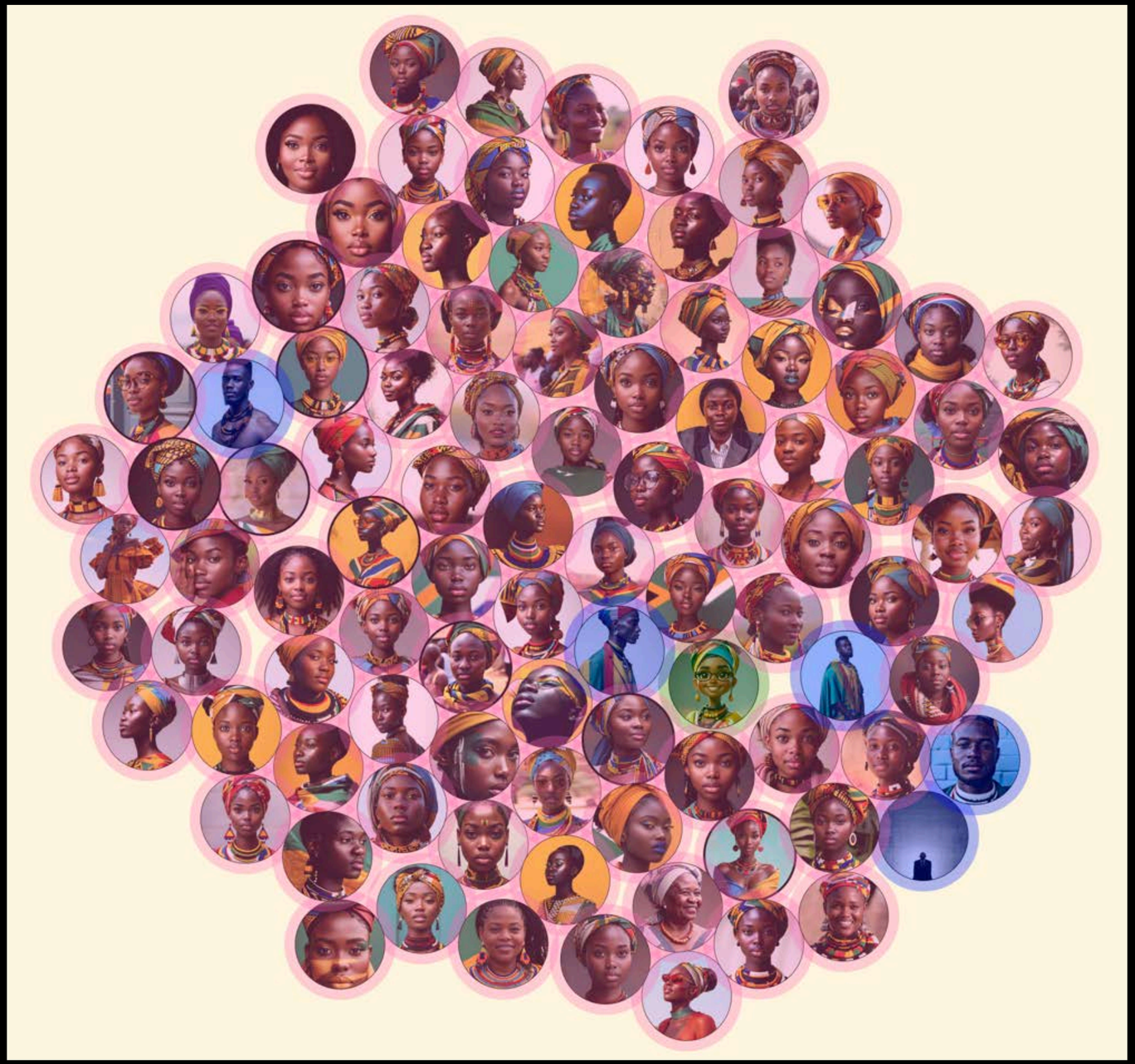


Word Frequencies:

1. Woman (54)
2. Wearing (42)
3. Man (40)
4. Black (21)
5. hair (18)

Prompt: A South African person

Prompt: A South African person

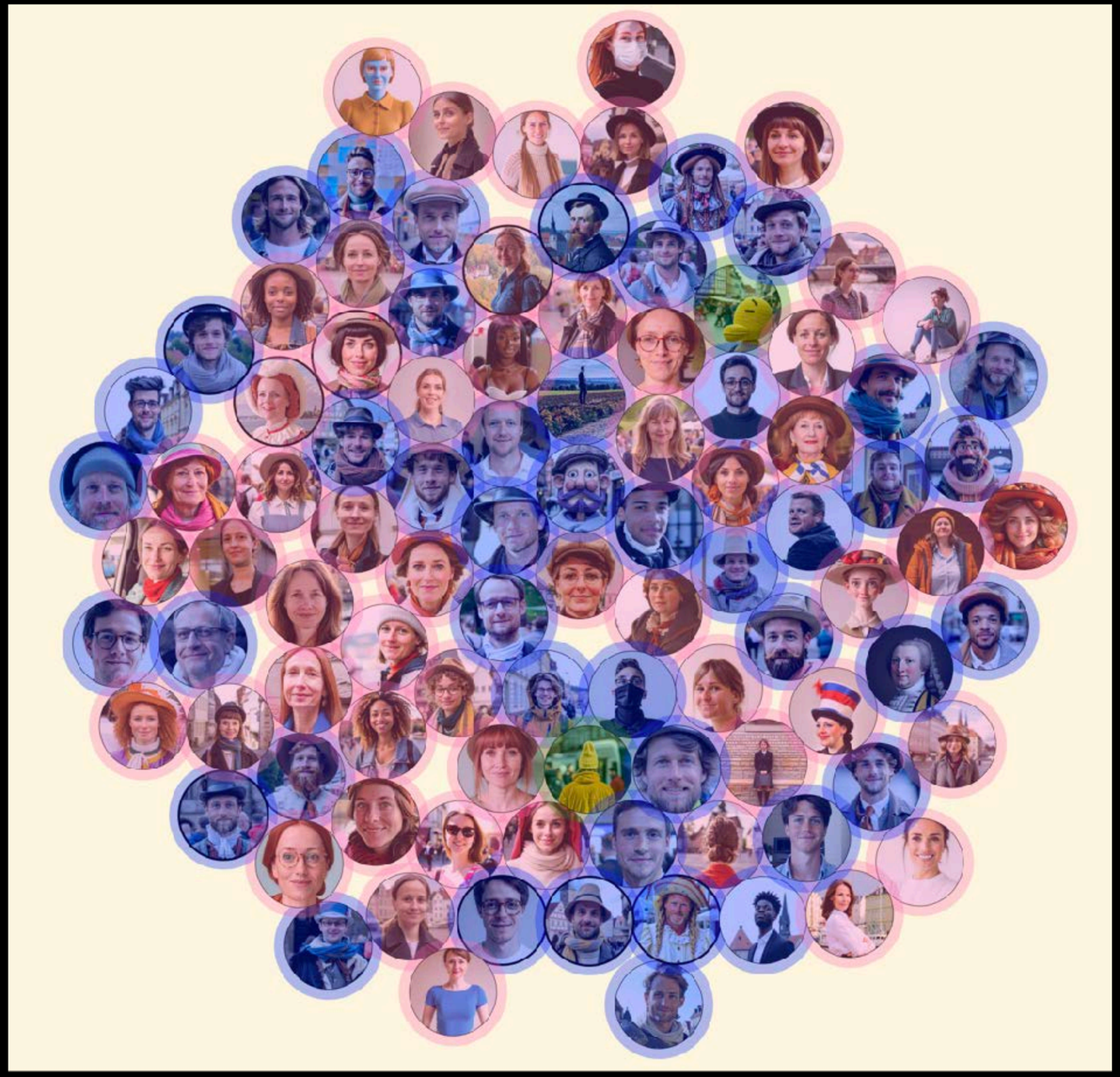


Word Frequencies:

1. Woman(94)
2. Colorful (58)
3. Beautiful (48)
4. Head (48)
5. Wearing(45)

Prompt: A Luxembourgish person

Prompt: A Luxembourgish person

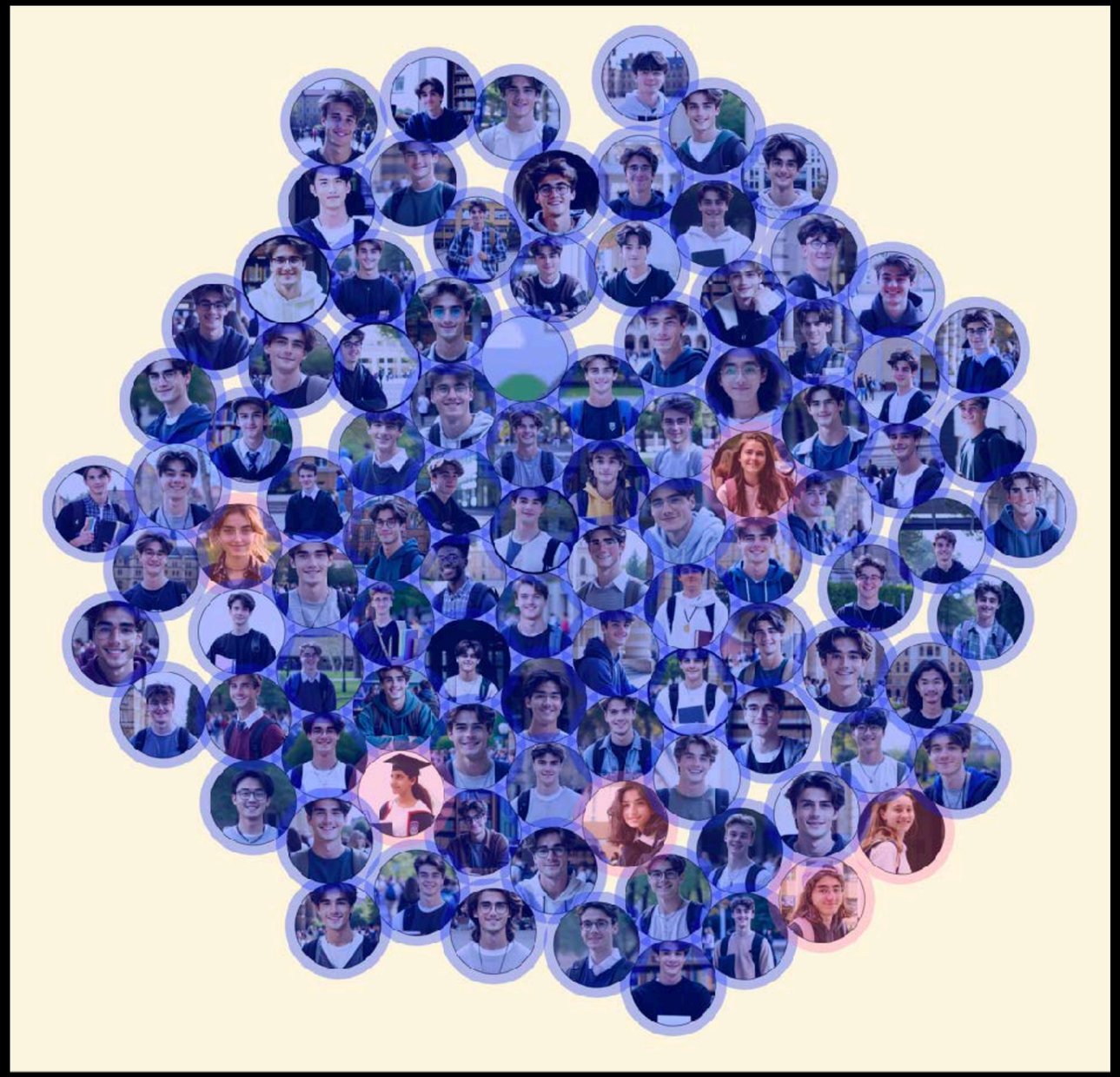


Word Frequencies:

1. Woman(52)
2. Wearing (50)
3. Man (45)
4. Hat (40)
5. Black(14)

Prompt: A University Student

Prompt: A University Student

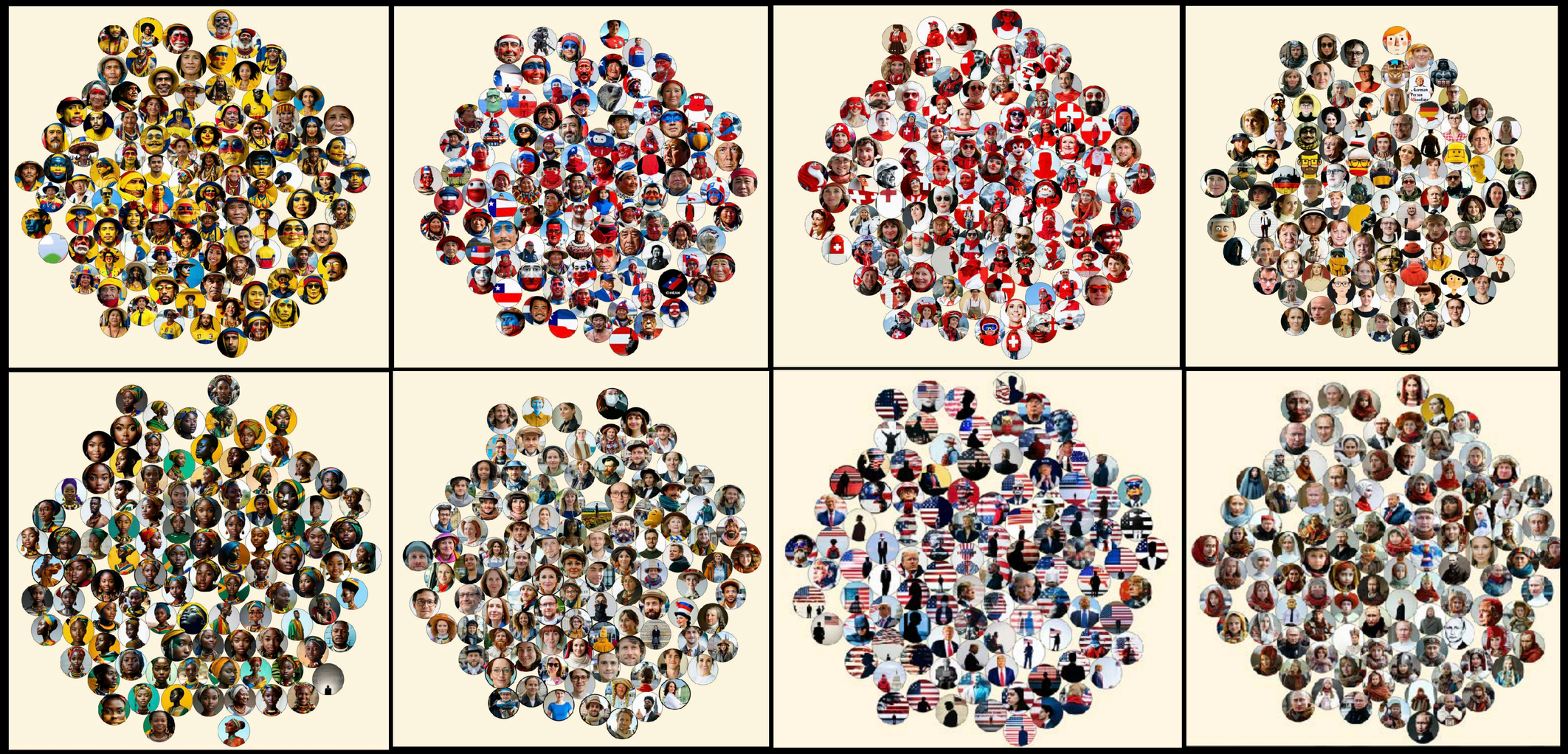


Word Frequencies:

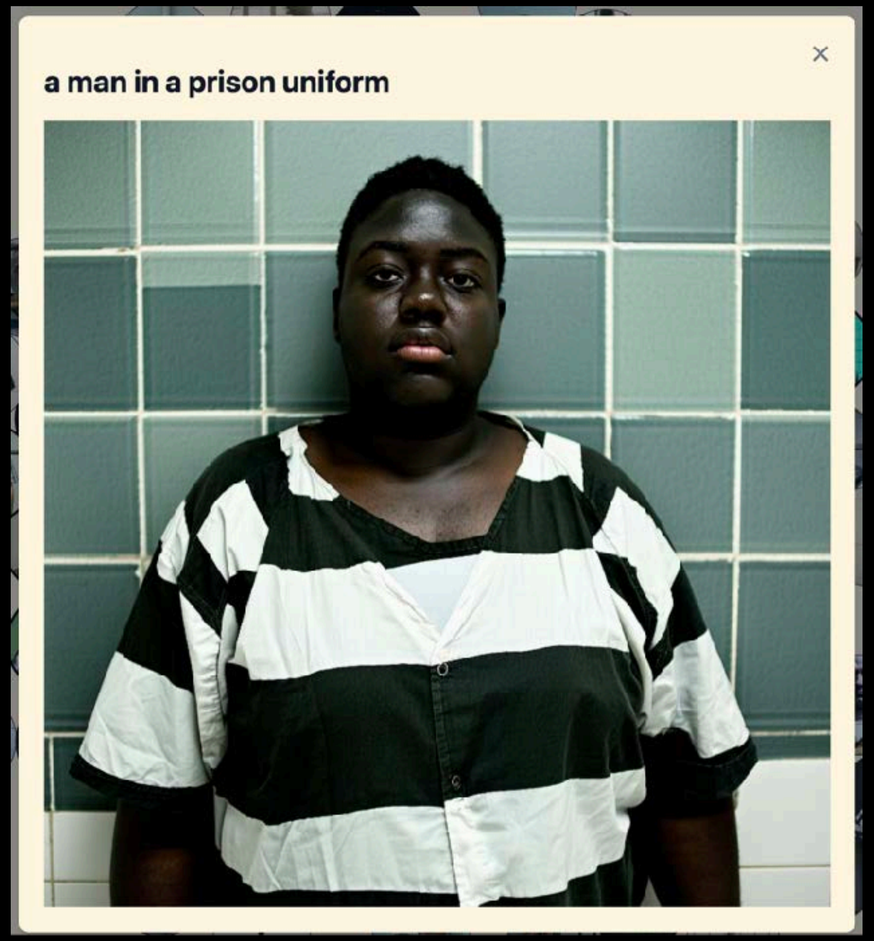
1. Man(91)
2. Young (60)
3. Backpack (42)
4. Glasses (29)
5. Smiling(17)

Future

Interesting to look at the photographic styles associated with each nationality



- **I only saw a variety of weight in the prompt ‘A prisoner’**



- **The fact race was only mentioned for POC shows how biased BLIP2 is**

a beautiful black woman with a colorful african flag wrapped around her

a black male doctor in a white lab coat

a smiling black woman with an afro bun

a black female doctor in a white coat

a black woman wearing a white nurse's hat

asian female doctor standing in hospital room

a cartoon black woman with curly hair and a smile

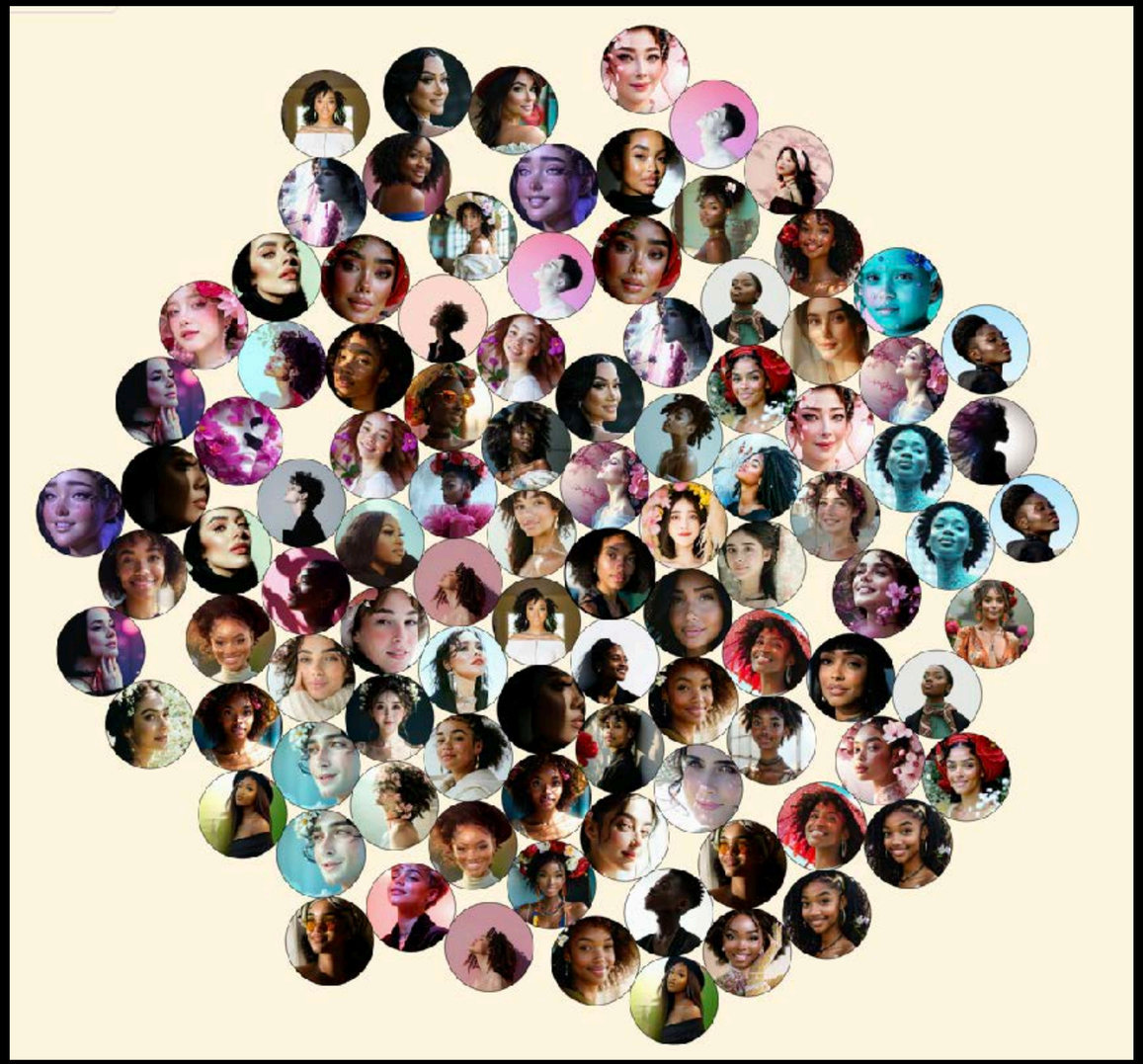
a smiling black woman wearing an orange scarf

a black male doctor with his arms crossed

a beautiful black woman with green eyes and a yellow dress

- Interesting that the adjective prompts mainly showed POC

Prompt: A Smiling Person



Prompt: A Beautiful Person

- **Initially wanted to continually look at the latest versions of these Image Generation tools**
- **Now I just want to finish what I have!**

Questions