



Emotion Detector

Facial Emotion Detection using CNN
by Andrew Seefeldt

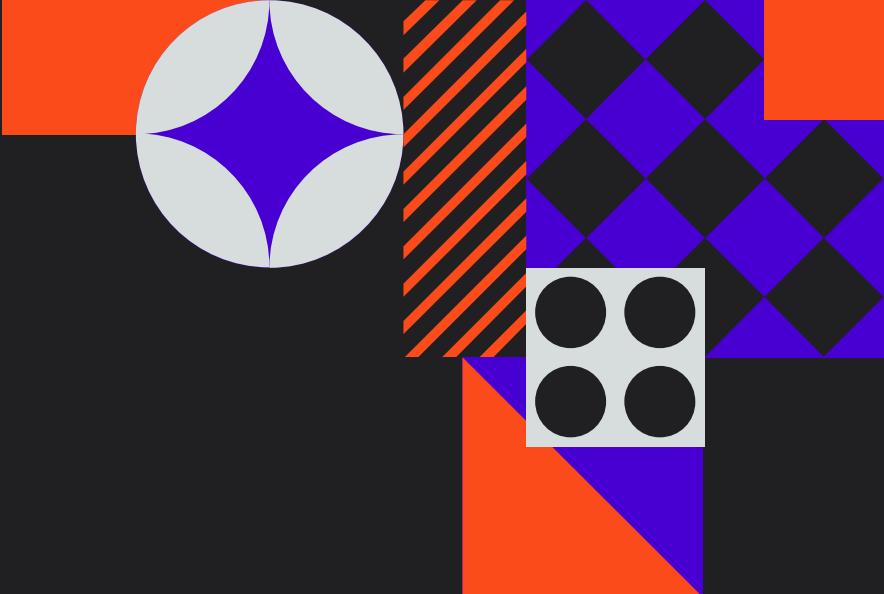




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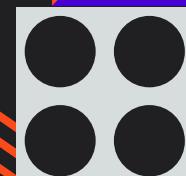
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05

Demo

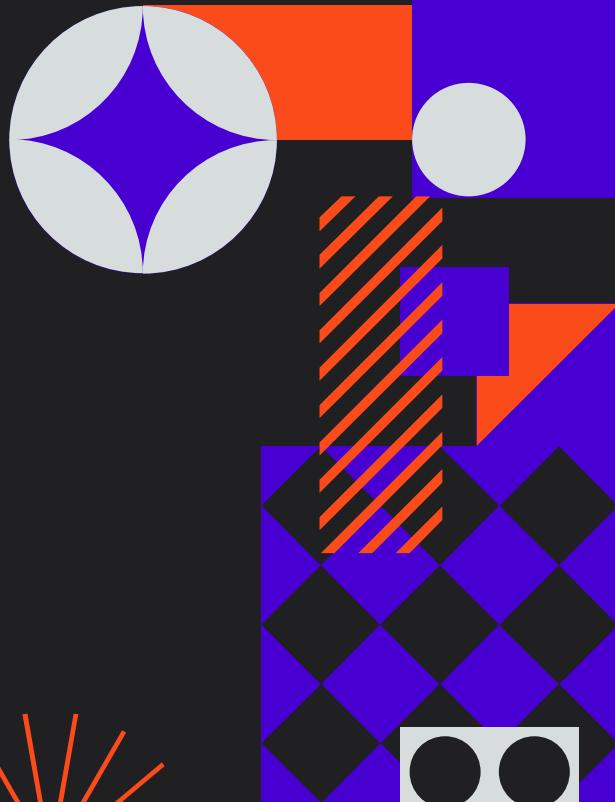
06

Questions



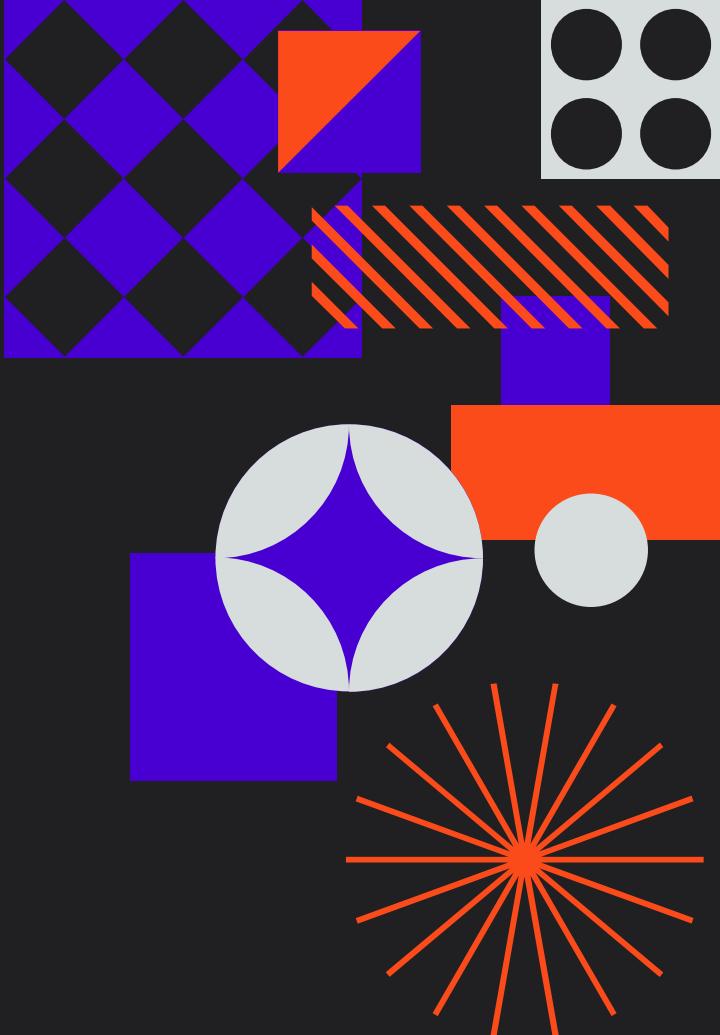
01

Background and Objective



What percentage of communication is non-verbal (not including voice tone or words)?

★ 55%



Non-Verbal Communication

- More than half of what you communicate is non-verbal
- On a zoom call that is predominantly your facial expressions
- Problem is, you can't see your face (without something)
- Even more difficult for neurodivergent and those with trauma



Purpose

- Create a AI model that can help clarify what you are communicating with your face
- Particularly useful for those that are neural divergent or have a history of trauma



02

Project Overview

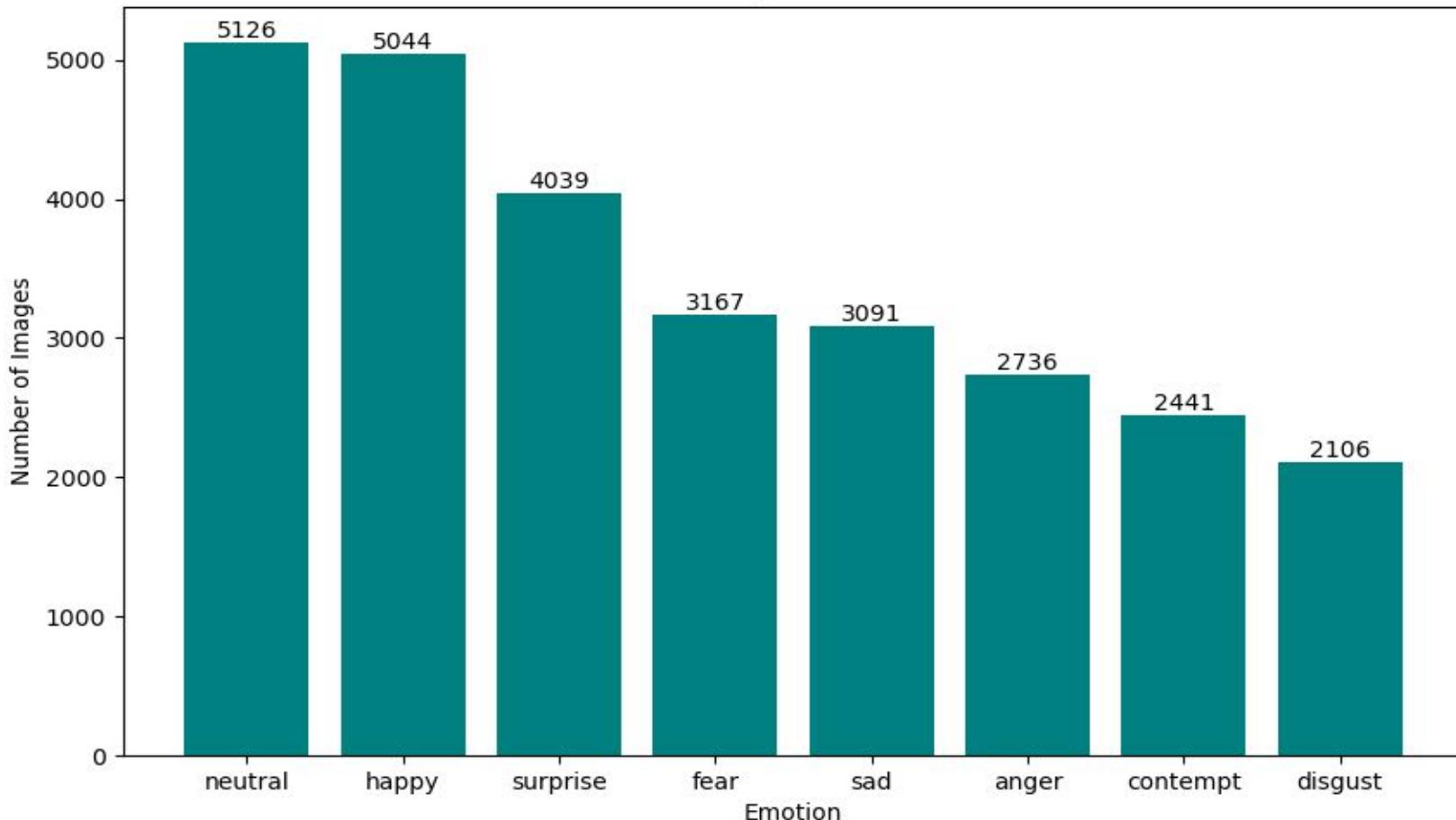


Data

- Images were acquired from Kaggle and were a portion of the AffectNet Dataset
- This dataset did not include valence and arousal
- This dataset consisted of 29,000 images

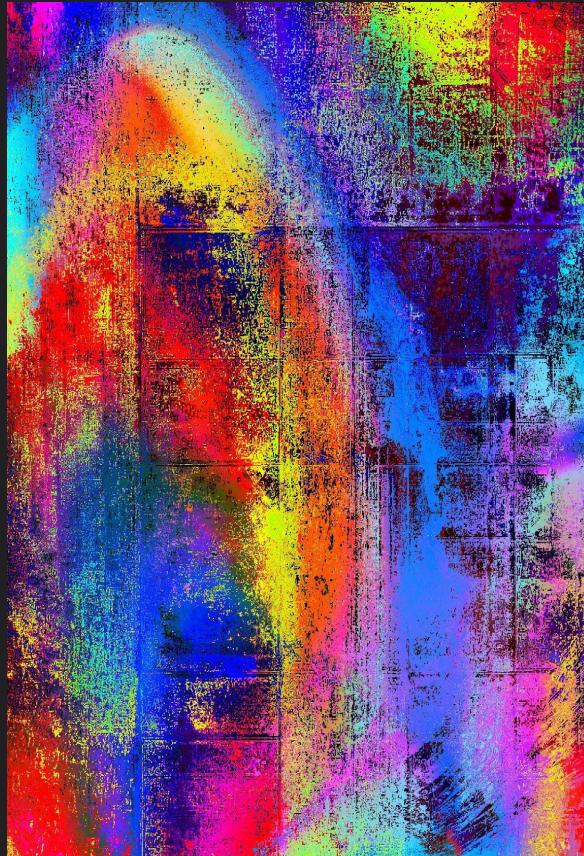


Number of Images for each emotion



Modeling

- DenseNet, MobileNet, and Restnet were used
- Data augmentation of:
 - rotation of up to 45 degrees
 - width shift of up to 20%
 - height shift of up to 20%
 - shear range of up to 20%
 - zoom range of up to 20%
 - brightness was lowered or raised by 20%
- A total of 6 models were used with various combinations of augmentation and image categories being used.



03

Model Performance



Performance

- Best performing was the mobile net at 23% accuracy compared to a baseline of 14% .
- but it is an angry model
- The DenseNet scored 10% above base, but was extremely skewed toward contempt.

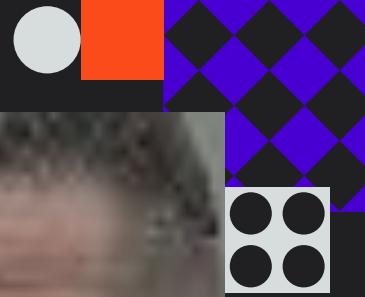
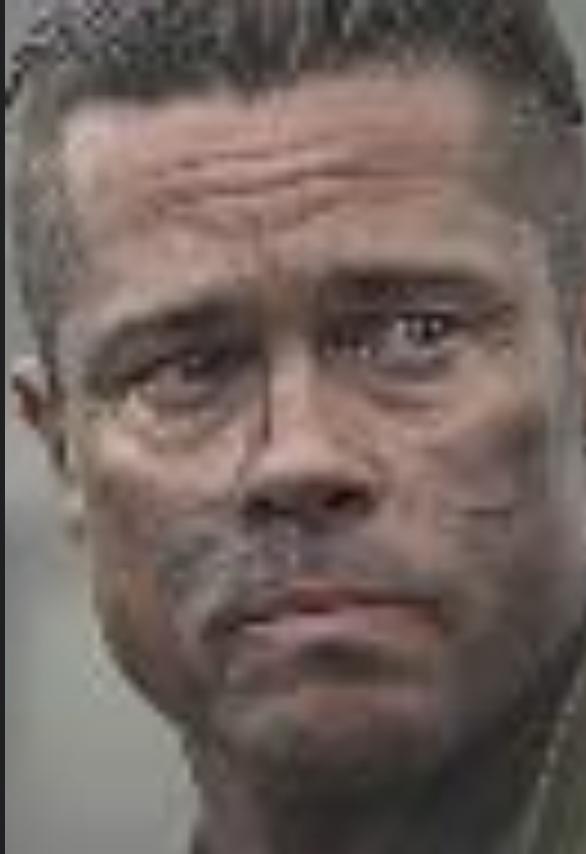


04

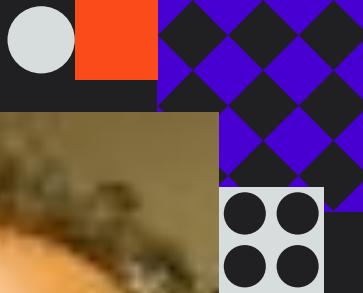
Examples



anger: 18.19%
surprise: 12.27%
disgust: 13.30%
fear: 13.37%
contempt: 16.28%
sad: 13.65%
happy: 12.94%



surprise: 12.37%
anger: 15.56%
disgust: 13.99%
fear: 14.31%
contempt: 15.48%
sad: 14.35%
happy: 13.94%



anger: 18.23%
surprise: 12.27%
disgust: 13.35%
fear: 13.39%
contempt: 16.24%
sad: 13.58%
happy: 12.93%

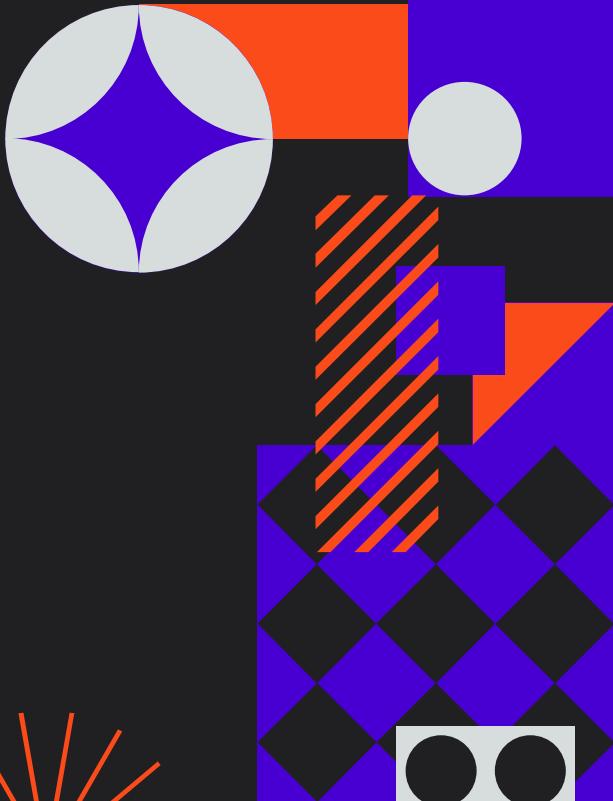


anger: 17.85%
surprise: 12.28%
disgust: 13.12%
fear: 13.31%
contempt: 16.50%
sad: 14.00%
happy: 12.94%



05

Demo



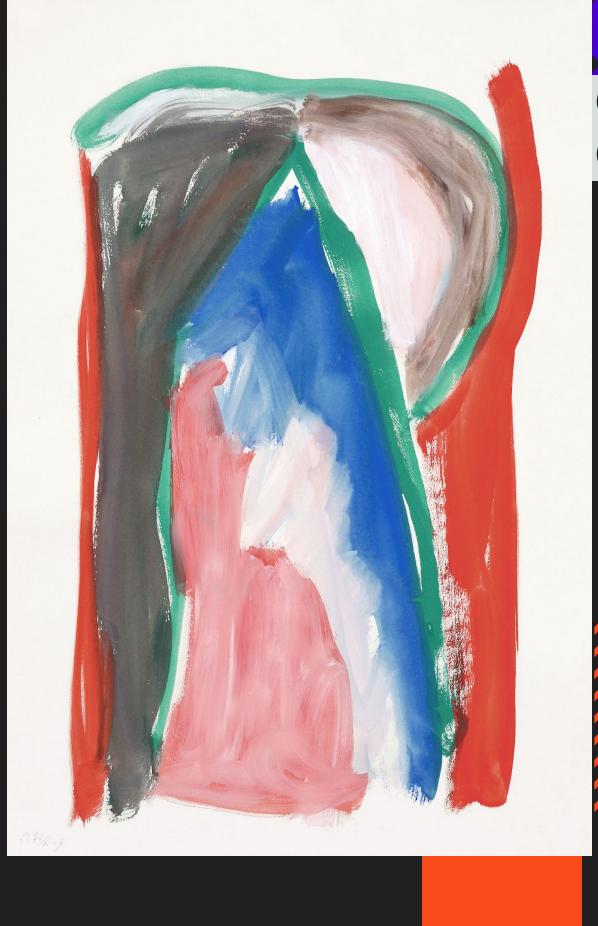
Conclusion

- Create a AI model that can help clarify what you are communicating with your face
- This can be a tool to help, but the model is not refined enough to be a stand alone tool



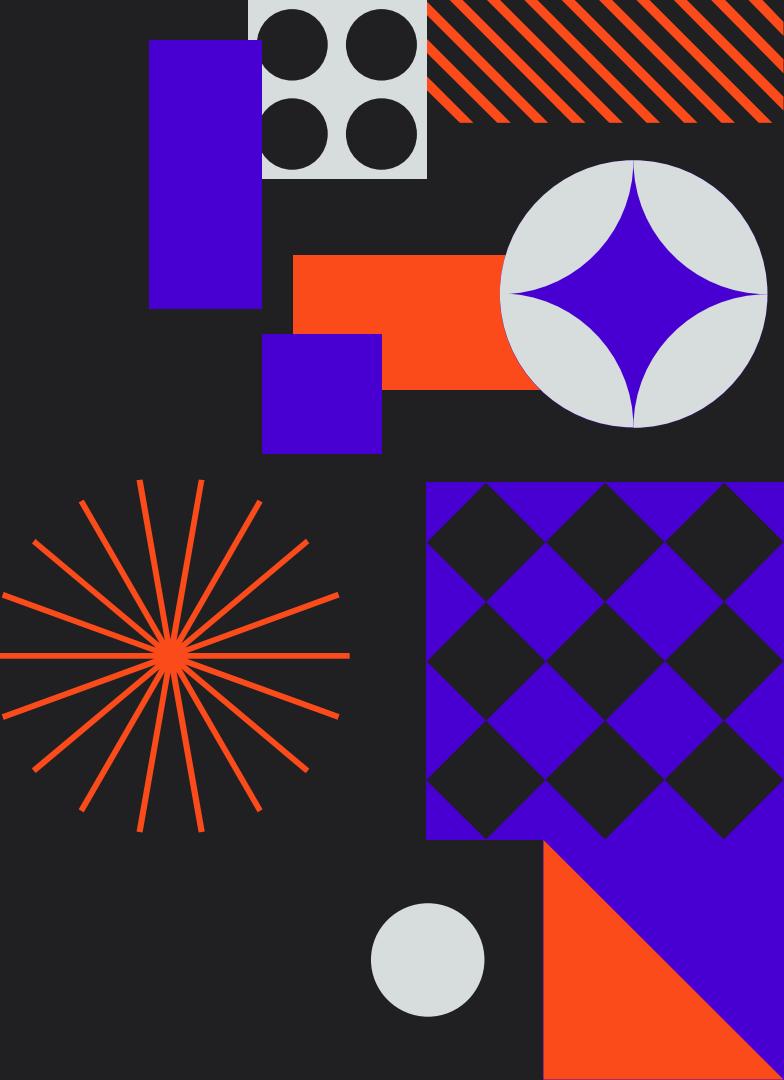
Recommendations

- Reduce noise by removing background
- Increase dataset
- Explore using gif or short videos



Thanks

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The pillars of social media strategies

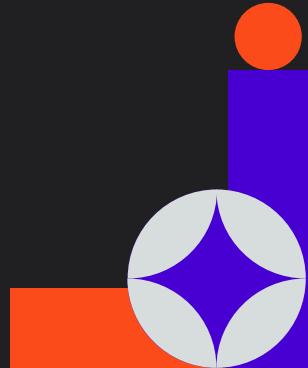


Content ideation

Content ideation involves brainstorming ideas for content that will engage your target audience. This could include thought-provoking questions, polls, surveys, stories and discussions. It is important to consider the interests of your target audience and new trends.

Platform selection

Careful platform selection is essential for successfully reaching your target audience. Additionally, you should analyze which platforms are most popular with your desired demographic and tailor your strategy to reach them more effectively. Keep up to date as there might be new trends that affect engagement.





Three goals of a social media strategy

More reach

To increase reach, it is important to create content that resonates with your target audience and utilizes the most effective methods for reaching new viewers

Engagement

Improving engagement involves creating content that encourages users to interact with your posts. Responding to comments in a timely manner is great way to show appreciation for their participation

Conversions

Creating content that drives conversions entails promoting sales or generating leads for your business. This could include hosting giveaways, offering discounts or coupons to followers or targeted ads





Four tips

Be consistent

Developing a consistent content plan is essential for any successful social media strategy. Have a schedule of when to post content, optimize with keywords and keep track of it all

Advertise wisely

Advertising on social media channels can be a great way to reach a wider audience quickly and effectively. However, it is important to use targeted, specific ads

Use analytics tools

It can help you measure key metrics like visits, click-through rates, impressions, and conversions as well as understanding how your audience is engaging with your content

Establish brand loyalty

Establishing brand loyalty involves creating relationships with existing & potential customers through appreciation & thoughtfulness across all communication channels including social media platforms



Six ideas for posts

Monday

A quote or thought provoking message which is related to your brand and encourages engagement

Tuesday

Behind the scenes of your product/service. Share a photo or video of what goes into creating the item/service

Wednesday

Fun fact about your company or industry in order to engage followers with something educational

Thursday

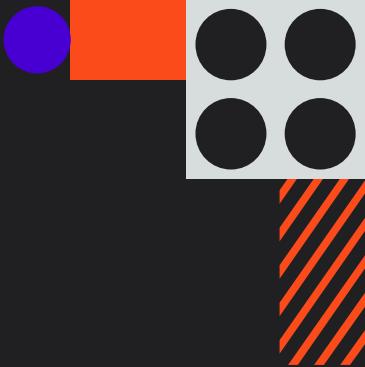
Ask followers for their opinion by posing an interesting question or encourage user-generated content

Friday

Feature customer success stories to highlight how customers have benefited from using your product/service

Saturday

Showcase upcoming events or promotions that are coming up so people know when to look out for them

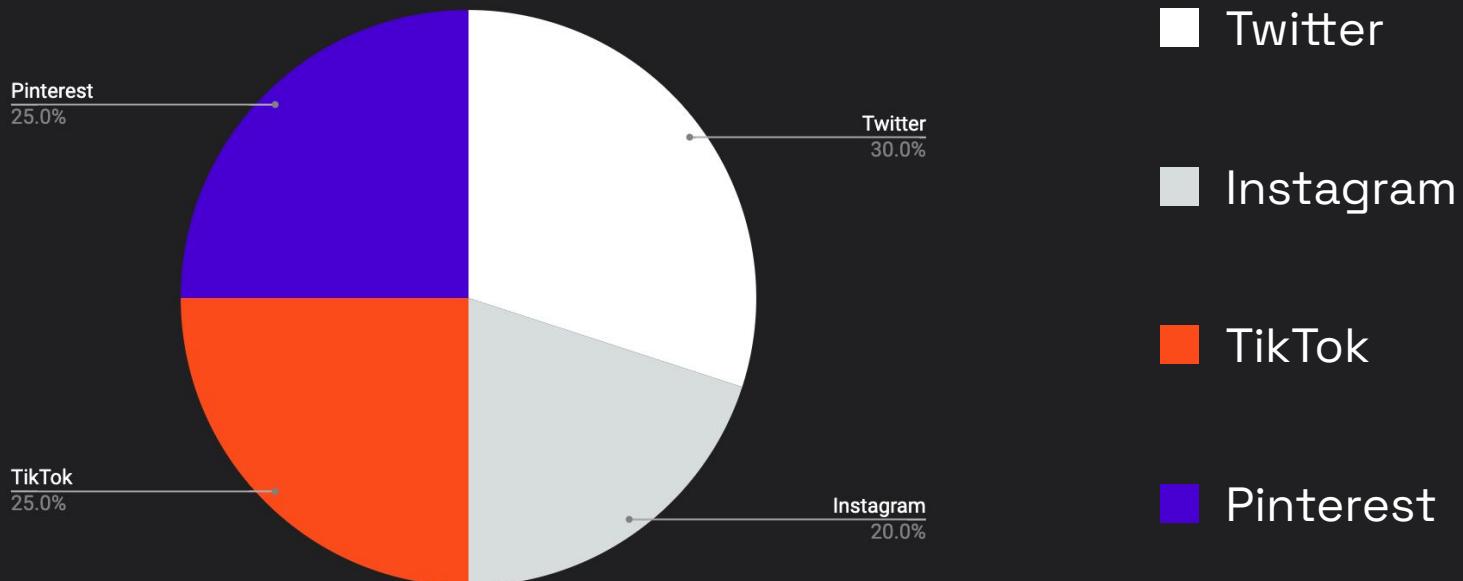




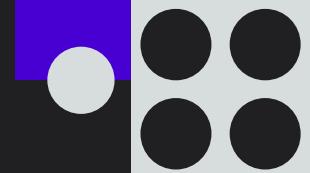
Social media is
all about people



Engagement share



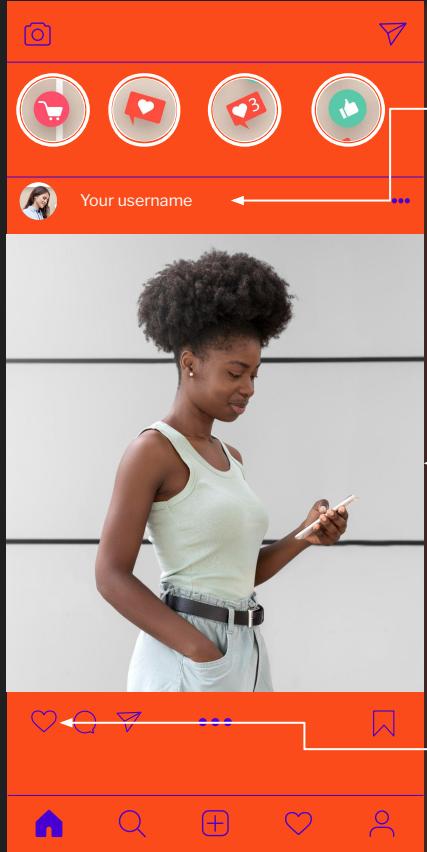
Follow the link in the graph to modify its data and then paste the new one here. [For more info, click here](#)



A table for your schedules

	Monday	Tuesday	Wednesday	Thursday	Friday
TikTok	OOTD	Dance trend	Stitch	A day with me!	Giveaway
Instagram	Story	Post	-	Reel	Story
Twitter	Answer FAQs	History thread	Fun facts	Quotes	-
Pinterest	Vision board	How it's made	Inspirations	-	Tips
Email	-	Why premium?	-	Special event	Free topic
Facebook	Our company	-	Product placement	Corporate video	-





1

2

3

This is how your page will look like

Remember that web pages must be optimized to work on phones, since 80% of people only visit webs from their smartphones

1. Your brand name should be the first thing they see
2. Put your best product on the front page
3. Your audience should have a way of engaging with your content



Buyer persona infographics



“I want to support the planet with each buy. That’s why I support companies that are eco-friendly”

Jane Doe

26, teacher

Bio

Our average client is outdoorsy, has creative jobs and a passion for the environment and the planet

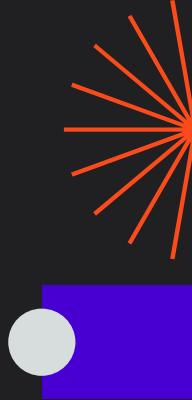
Pain points

Programmed obsolescence, difficulty repairing products and too much usage of unnecessary plastics

Motivations

- Self-improvement
- Organisation
- Ecology

Personality

- Strong ideas in favor of ecology, sustainability, recycling and upcycling
 - Avid user of social media, specifically TikTok and Twitter
 - Keeps up to date with trends and follows brands that do so
- 



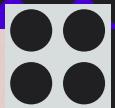
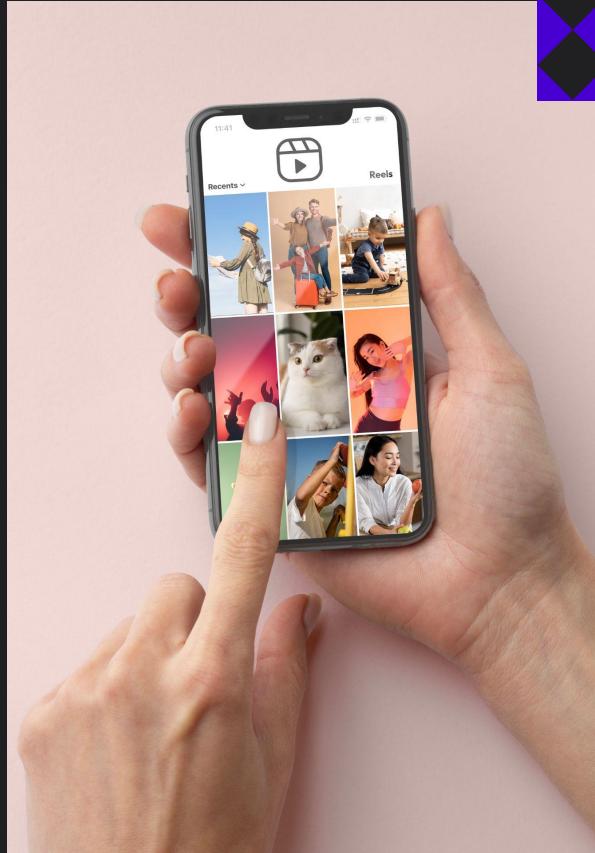
Roadmap infographics of our socials

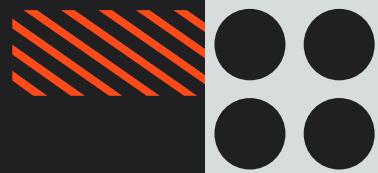
Initiative	Objective	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Dance trend	Make a video of our team following the newest trend on TikTok	●	●										
A day in my life	Showing the most human side of our company			●	●	●	●						
Anniversary giveaway	Generate engagement and get new followers			●	●	●							
“How it’s made” reel	Show our creative process and engage new followers				●	●	●						
Live on TikTok	Create a webinar to show new clients how to use our products						●	●	●	●	●		
Instagram contest	Get more people to speak about us and use our hashtag “#company”								●	●	●	●	●



“A day working with me”

This trend shows the perks of your company and helps you establish brand identity





Testimonials of past clients



“The team was great to work with! They provided fast and helpful service and their attention to detail was top-notch. Highly recommend!”

—Laura Patterson



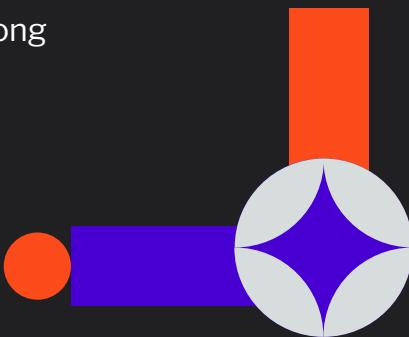
“I had a fantastic experience working with them. They made the process easy and stress-free. I will definitely buy here again”

—John Nelson



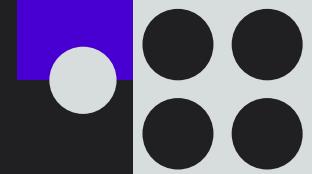
“We had been searching for the right solution for our business for a long time, but the team found us the perfect fit!”

—Peter James





Social media analytics



xxx billion

Users
worldwide



xh xmin

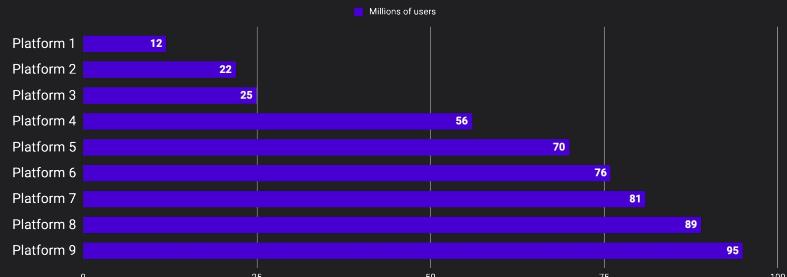
Average
time spent



xx

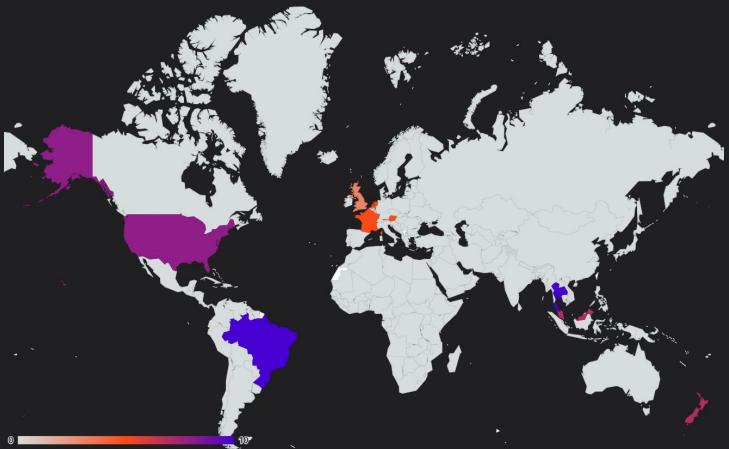
Number of
platforms used

Platforms with most users



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Worldwide reach



xxx billion

Country 1 users

xxx billion

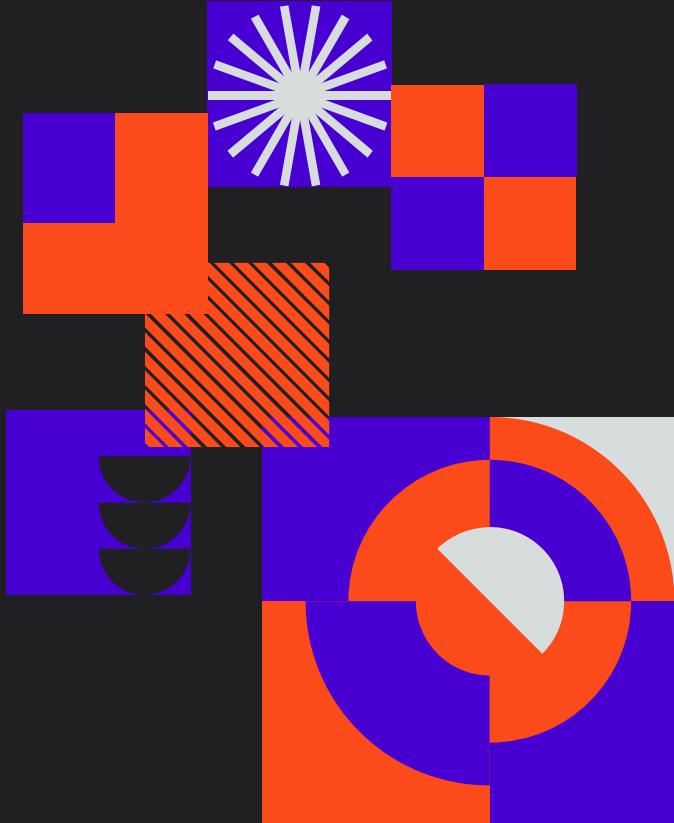
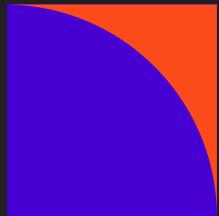
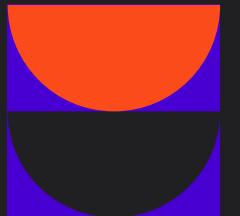
Country 2 users

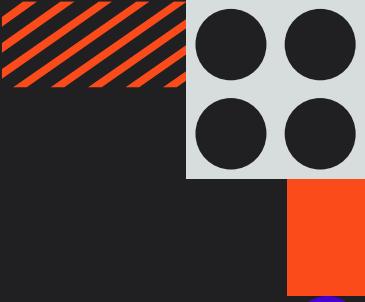
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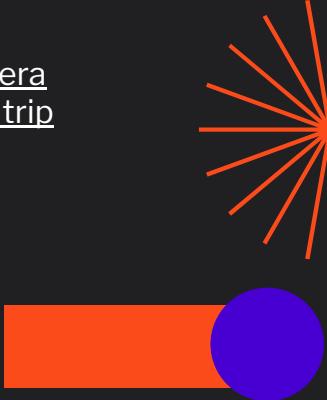
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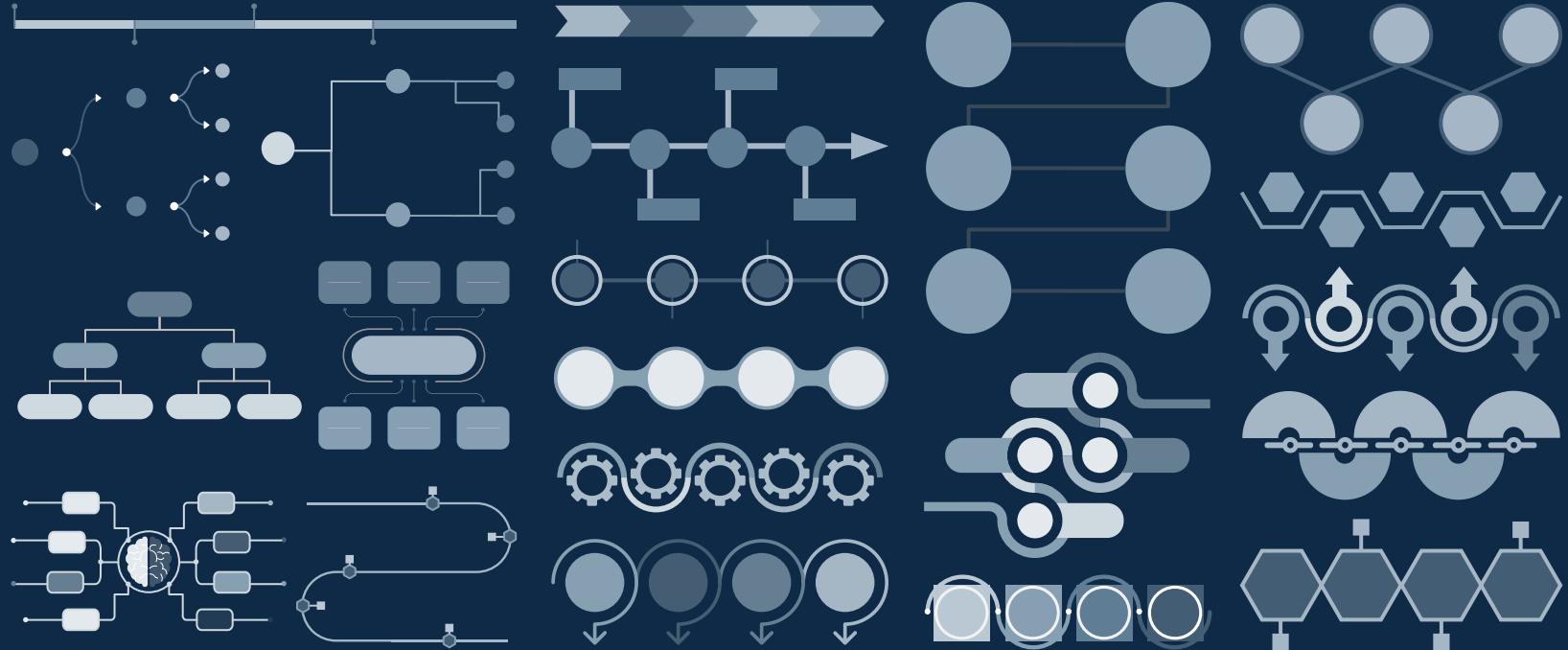
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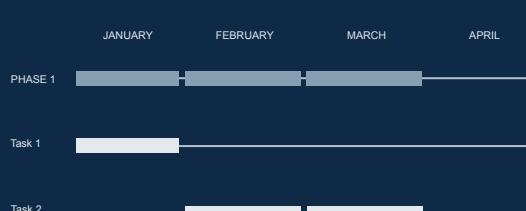
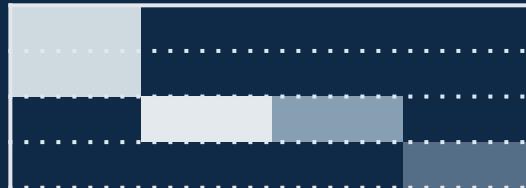
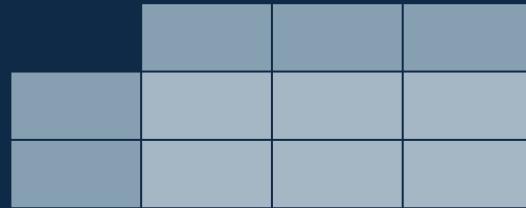
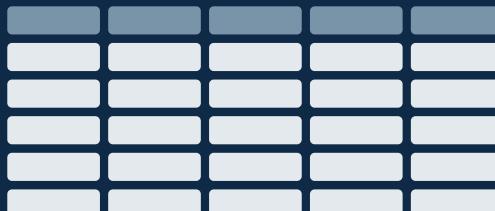
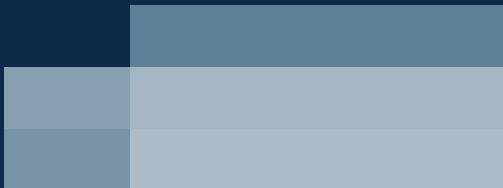
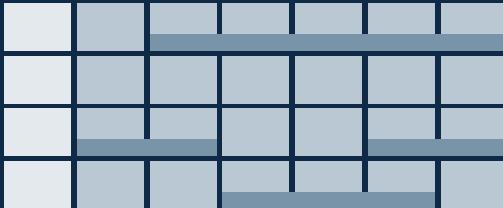
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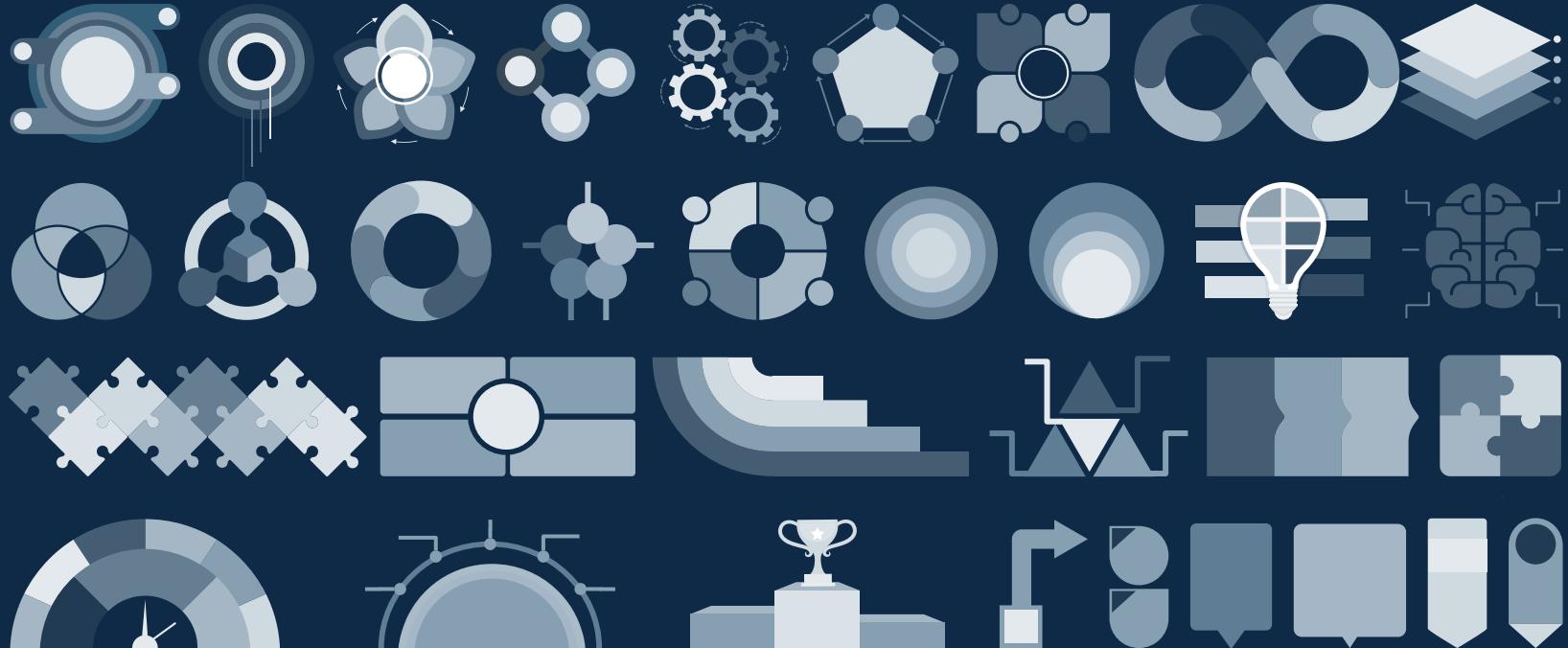
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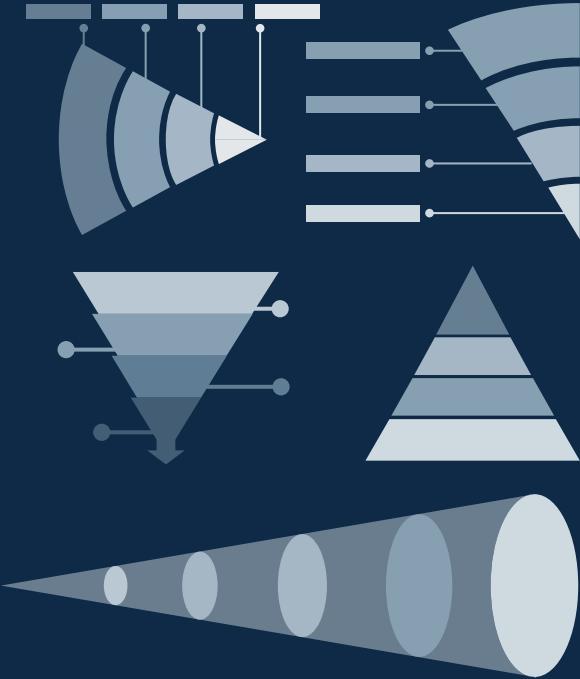
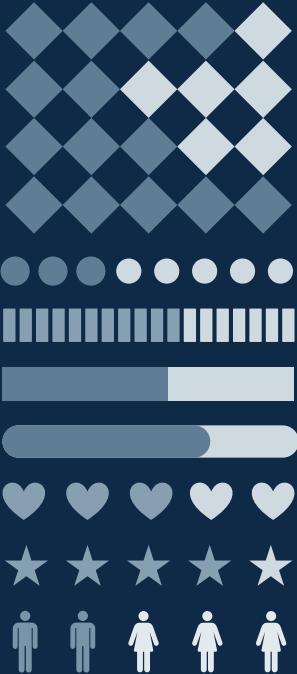
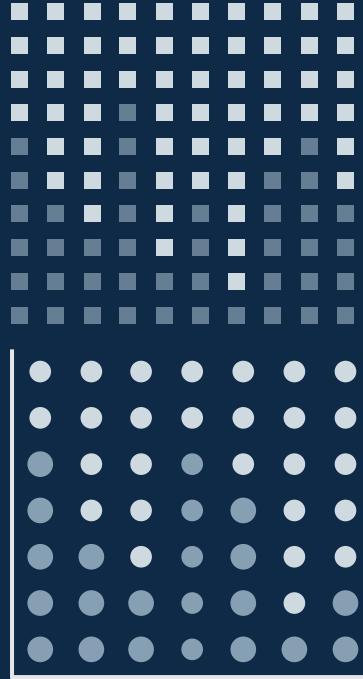












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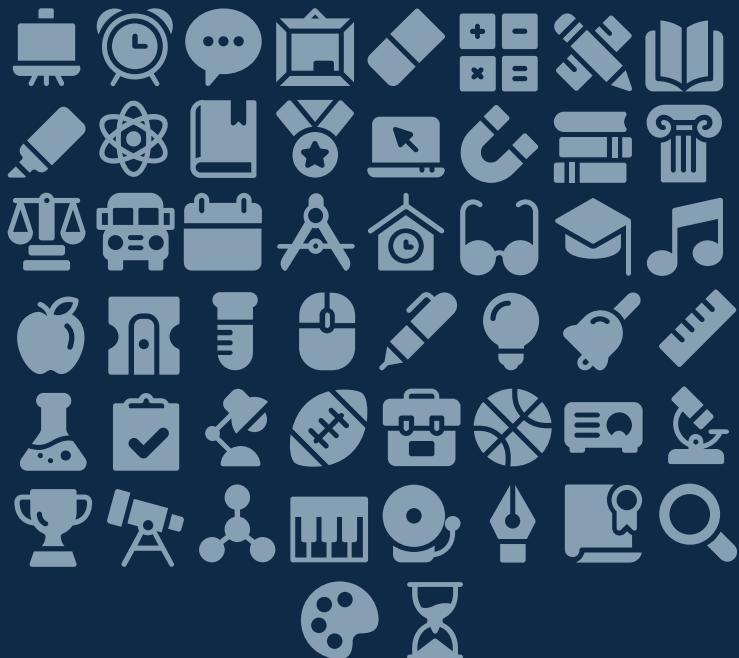
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Educational Icons



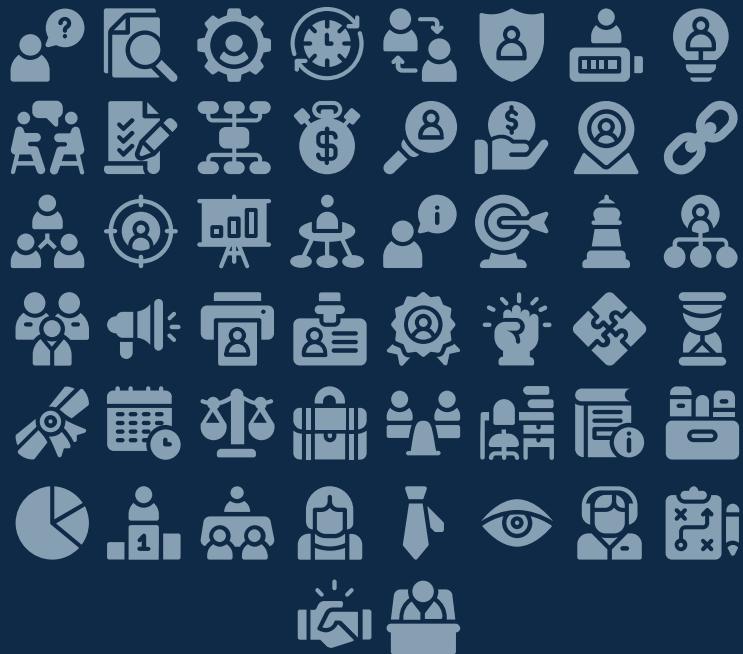
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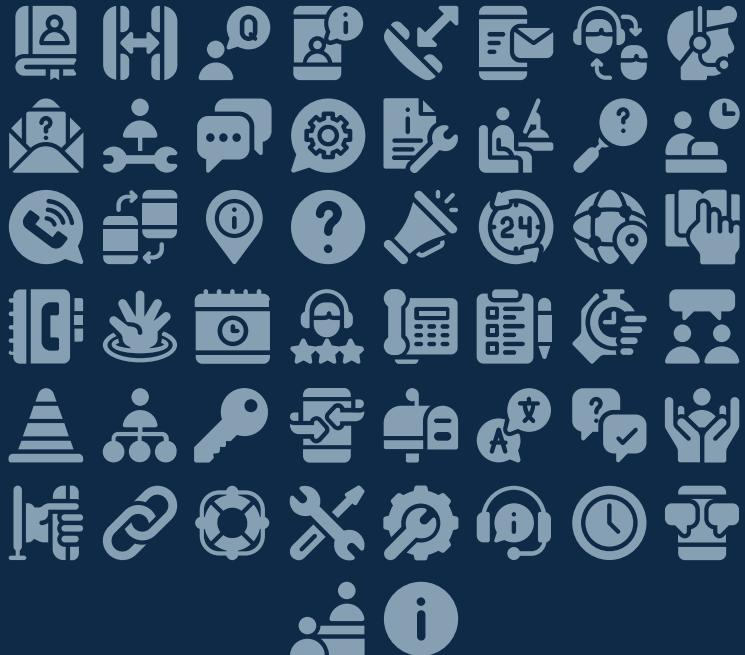
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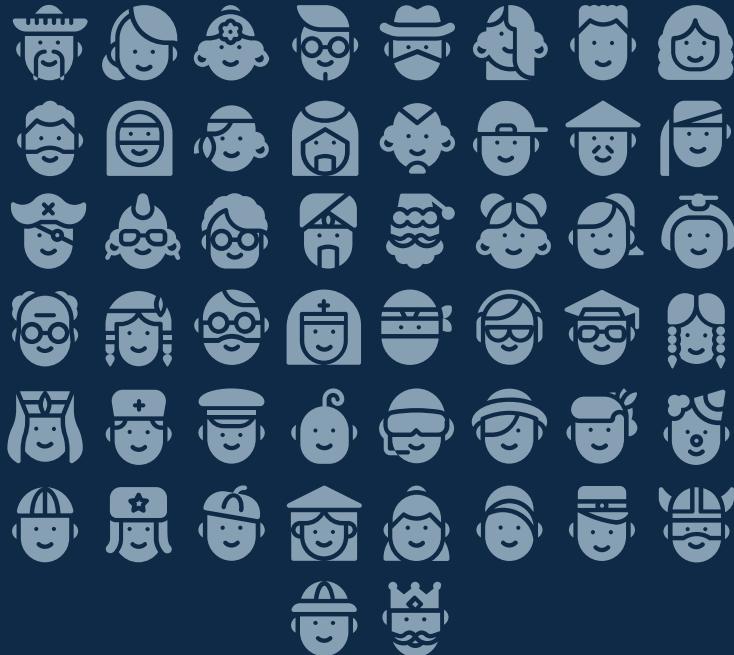
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Help & Support Icons



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Performing Arts Icons



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SEO & Marketing Icons



