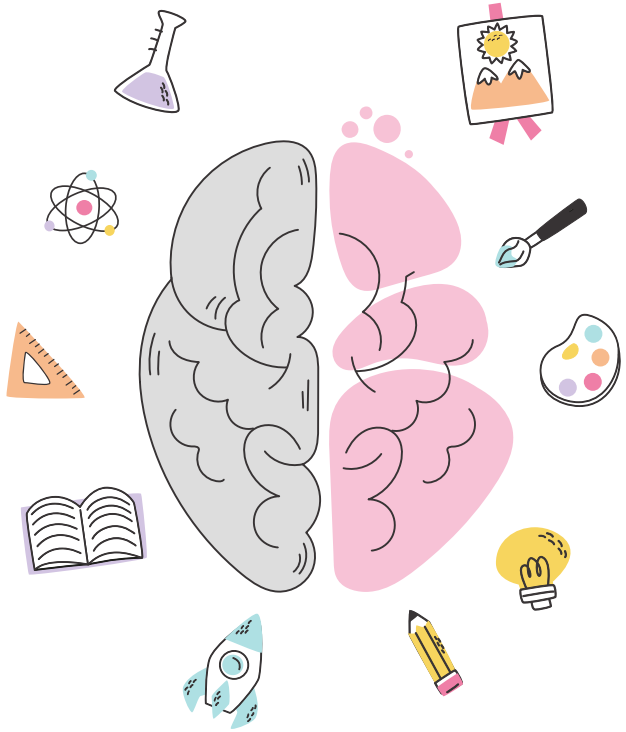
The brain that changes itself

Jiani & Hrishi



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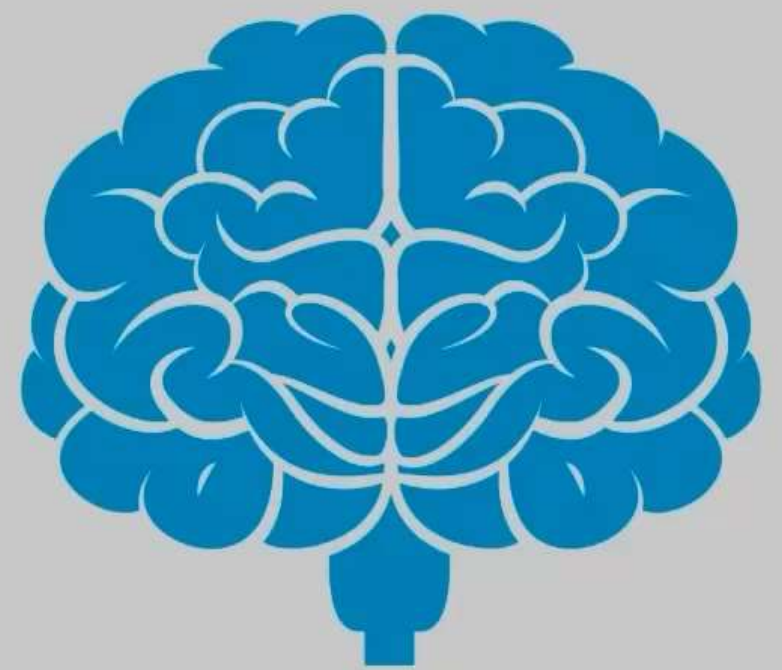
01

Neuroplasticity

NEURO = NERVOUS SYSTEM

PLASTICITY = PLASTOS = MOLDABLE

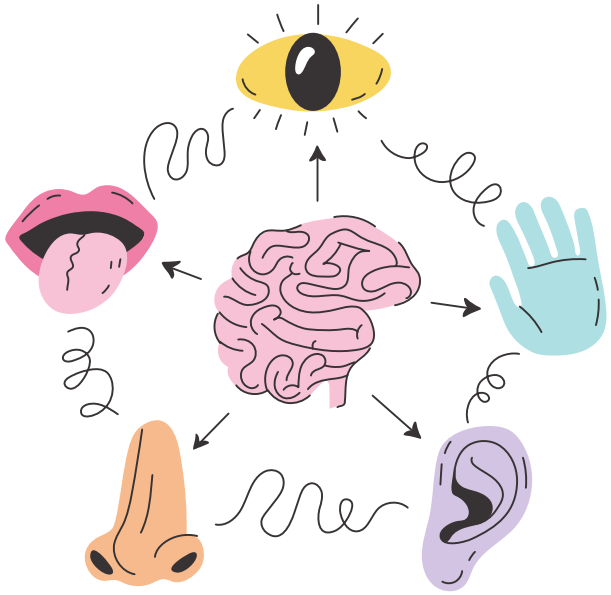
Greek Root



Neuroplasticity

02

Key Chapters



Key Chapters

– *Midnight Resurrections* (Stroke Recovery and Rehabilitation)

- **Concept of Neuroplastic Rehabilitation:** This chapter discusses how Dr. Edward Taub used **Constraint-Induced Movement Therapy (CIMT)** to help stroke patients regain use of paralyzed limbs.

- **Theory of Learned Non-use:** Taub discovered that when patients avoid using an affected limb, the brain “learns” not to use it, reinforcing the disability. His therapy challenges this by forcing patients to use the affected limb, stimulating new neural pathways.

- **Outcome:** This demonstrates that even severely damaged brains can reorganize and recover function with consistent, targeted practice.

Key Chapters

– *Brain Lock Unlocked* (Stop Worries, OPsessions, Compulsions, and Bad Habits)

- **OCD and Self-Directed Neuroplasticity:** Dr. Jeffrey Schwartz developed a **Four-Step Method** to help patients manage OCD by retraining their brains.

- **Self-Directed Neuroplasticity:** Patients can train their brains to rely less on obsessive thinking and to increase self-control.

- **Outcome:** This chapter shows how neuroplasticity can help people get rid of bad habits and negative thinking, illustrating the brain's potential to change its own behavioral patterns.

Key Chapters

– *Dark* Side

- **Case Study on OCD and Self-Directed Neuroplasticity:** Dr. Jeffrey Schwartz developed a **Four-Step Method** to help patients manage OCD by retraining their brains.
- **Self-Directed Neuroplasticity:** Patients learn to resist compulsions and reframe obsessive thoughts, creating new neural pathways over time. This technique empowers patients to exert conscious control over their brain's wiring.
- **Insight into Habit Formation:** Schwartz's work suggests that intentional behaviors can alter neural patterns, which has implications for how AI could reinforce or disrupt cognitive habits.

03

Critical View

for the book

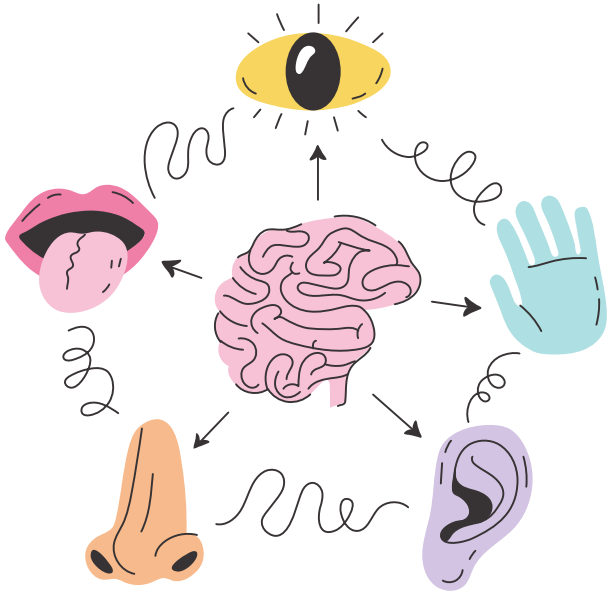
Critical View of *The Brain That Changes Itself*

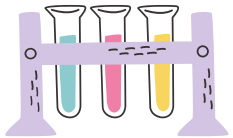
Strengths:

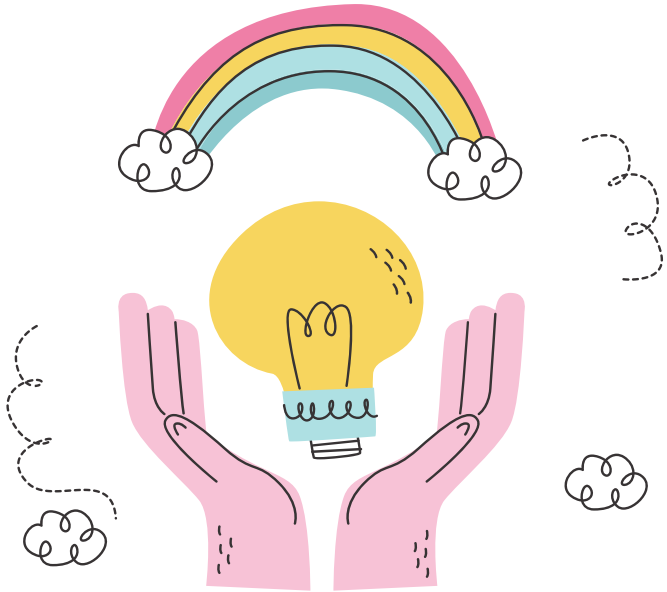
- Revolutionary insights into neuroplasticity
- Engaging and inspiring real-life case studies
- Challenges conventional medical limits

Limitations:

- Focuses heavily on positive outcomes
- Limited discussion on risks of neuroplasticity







03

Link with AI

Link with AI

Similar

Just as the brain changes neural networks through external stimuli, AI also relies on constantly adjusting algorithms and models to adapt to new data.

Difference

Although AI models can "learn" by constantly adjusting parameters, their learning mechanism is based on algorithms rather than physiological nervous systems. Therefore, AI's learning and adjustment do not truly reflect the complexity of neuroplasticity.

05

Critical View

for AI

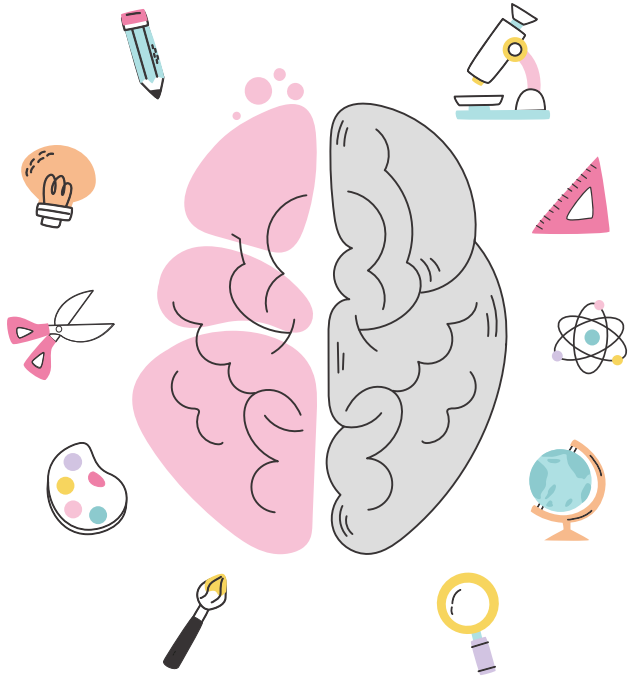
Critical View for the AI

- The intention of the intervention: **treatment or manipulation**?
- Privacy and Data Security
- Over-reliance on “plasticity”

Conclusion

- Neuroplasticity shows the brain’s adaptability and potential for recovery.
- Highlights possibilities for treating neurological challenges.
- Emphasizes risks of repeated negative experiences reshaping the brain.
- Raises ethical concerns on AI’s influence on cognitive patterns.
- Encourages responsible design in technology to protect mental health.

Thanks!



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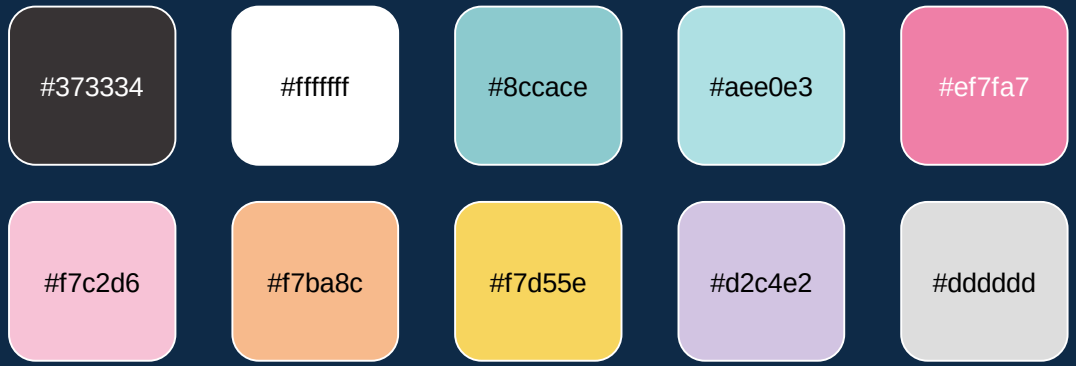

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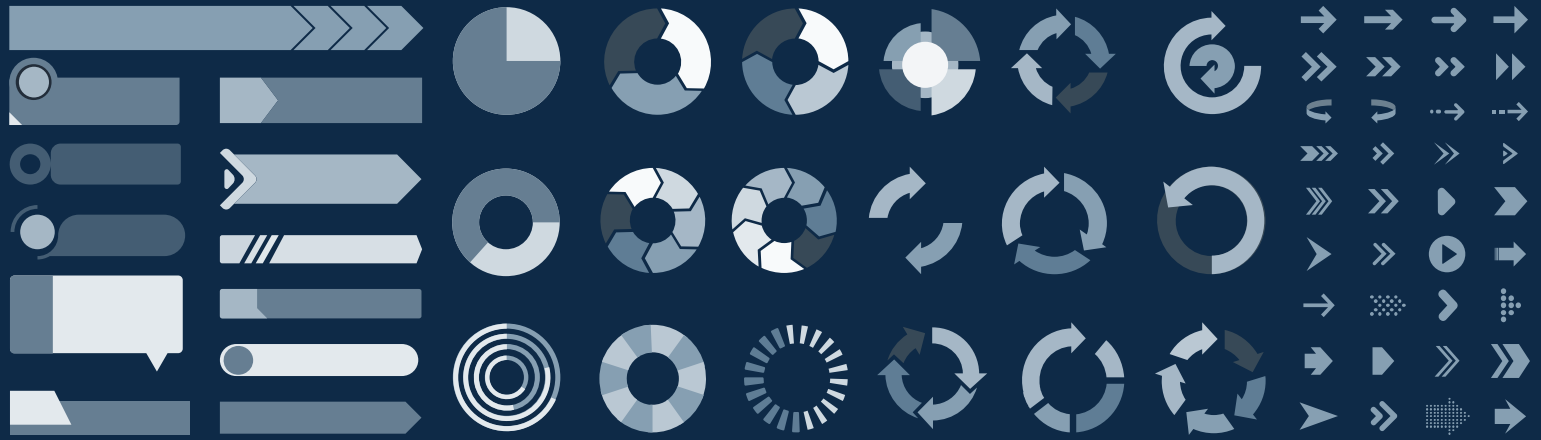

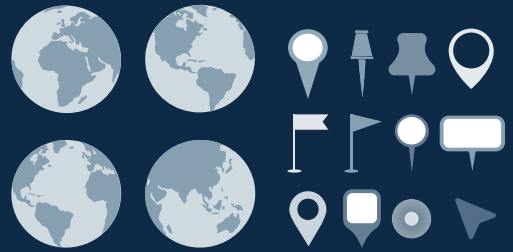

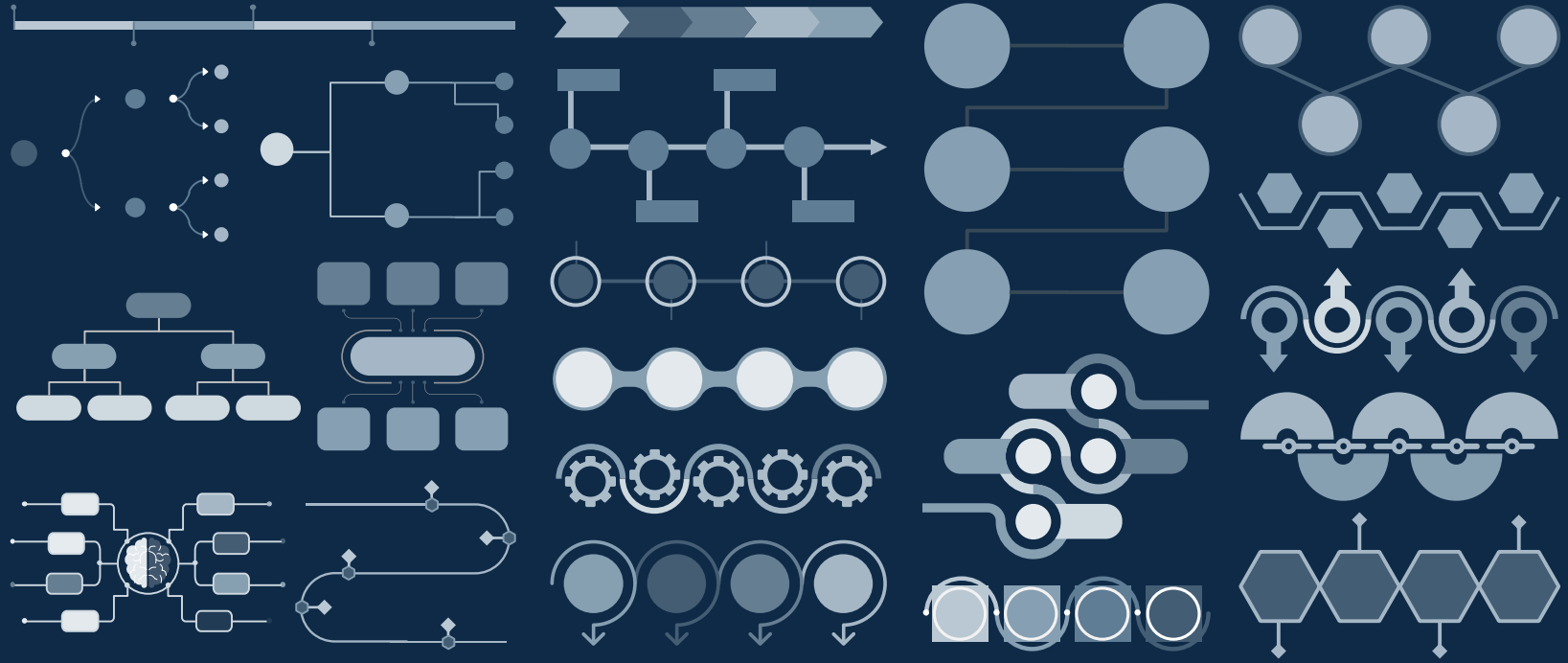

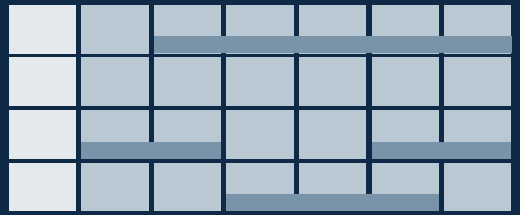

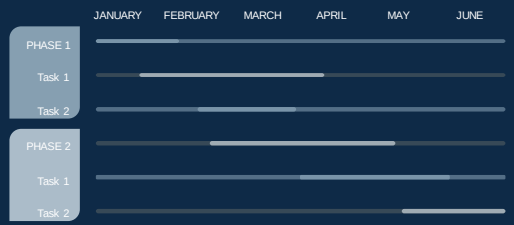
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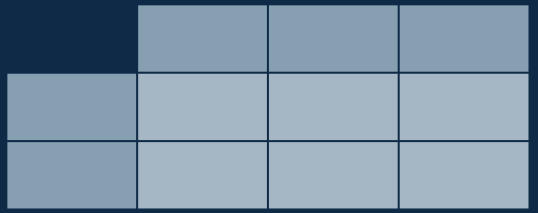

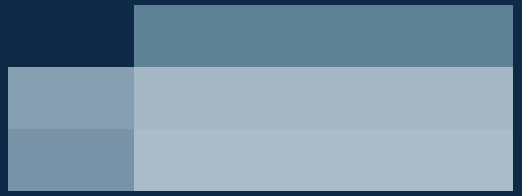

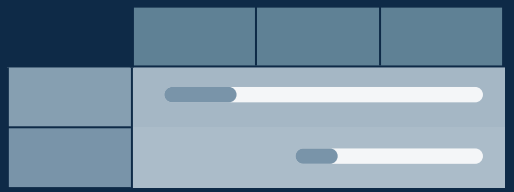

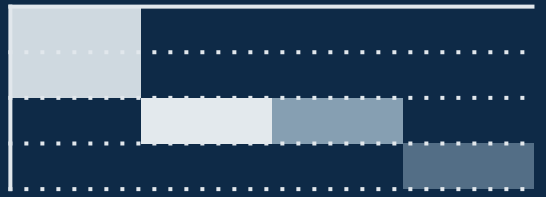

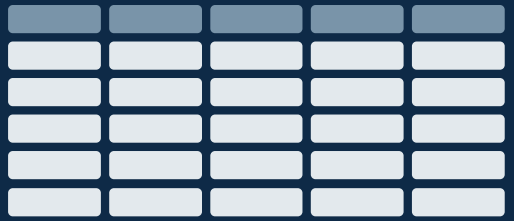

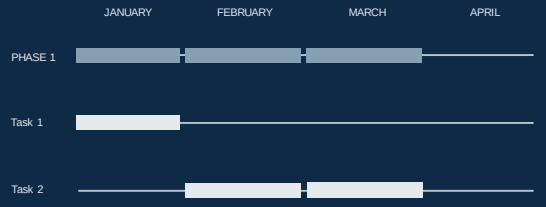
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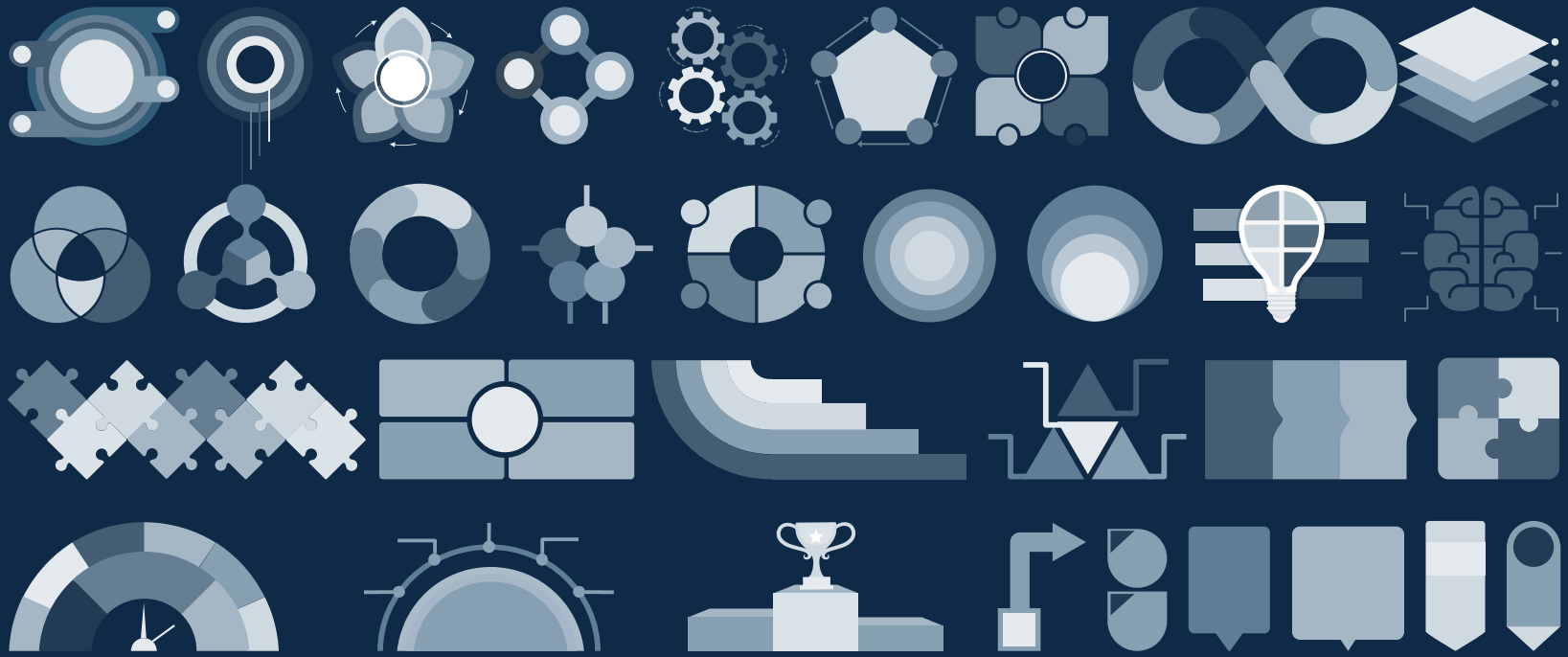

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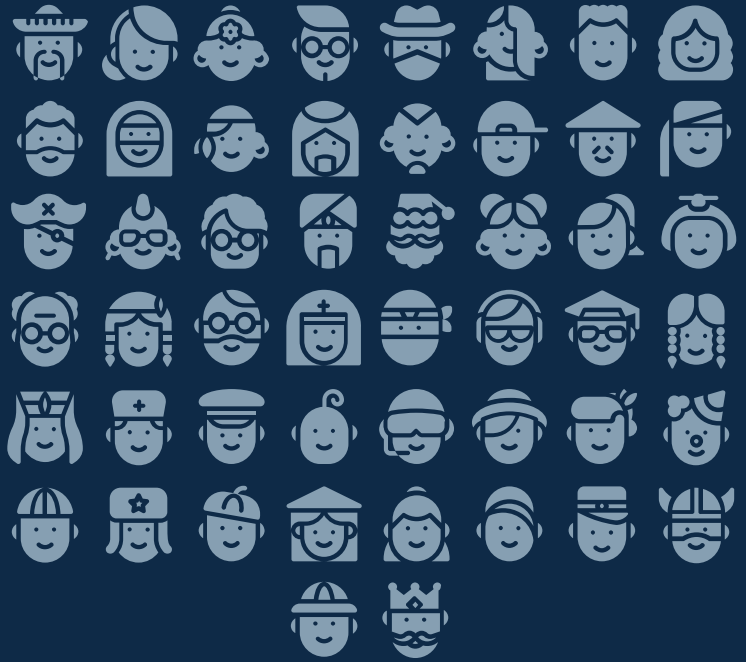

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