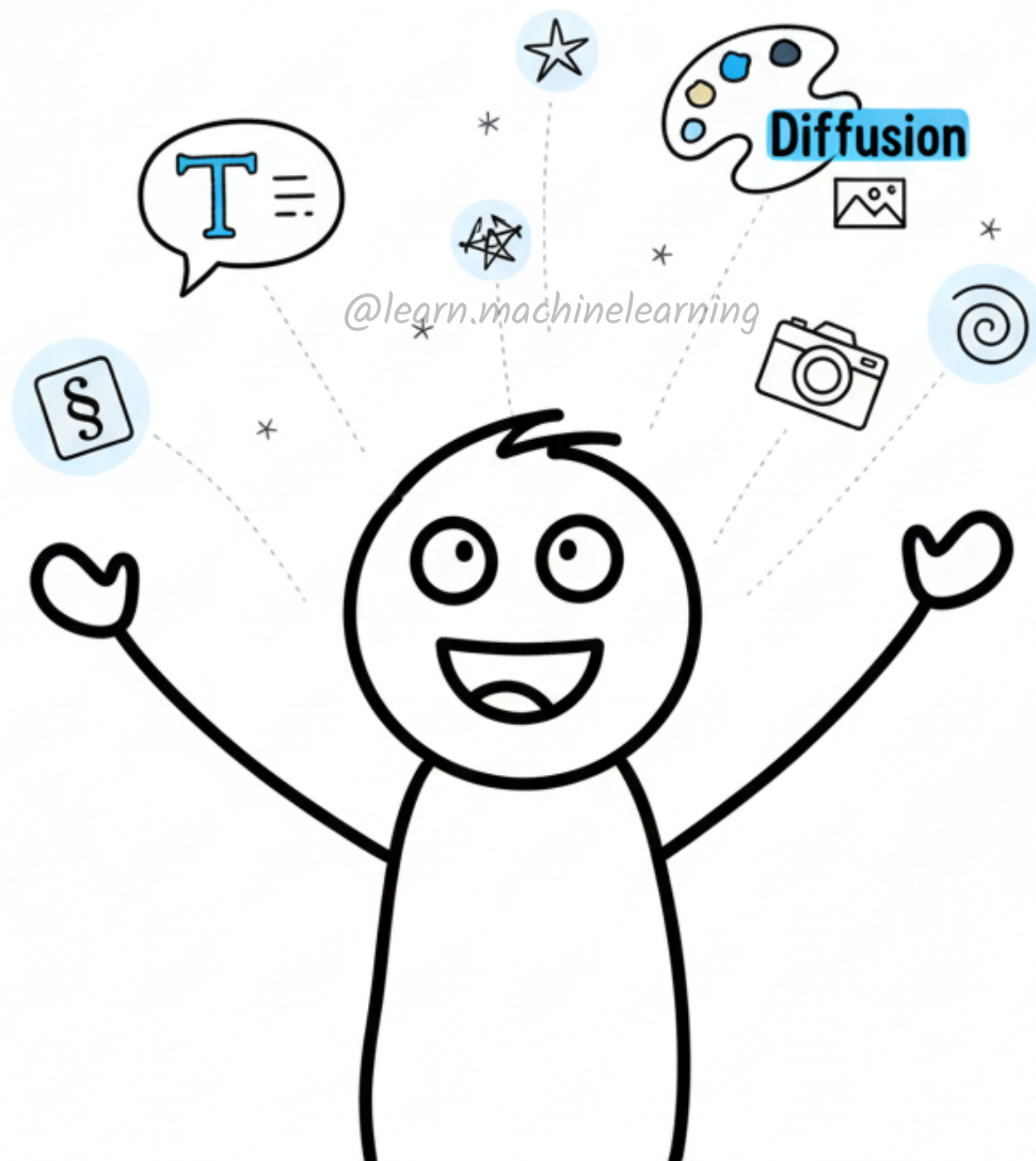


GENERATIVE AI SERIES: DAY 4

The Future is Here: Transformers & Diffusion!

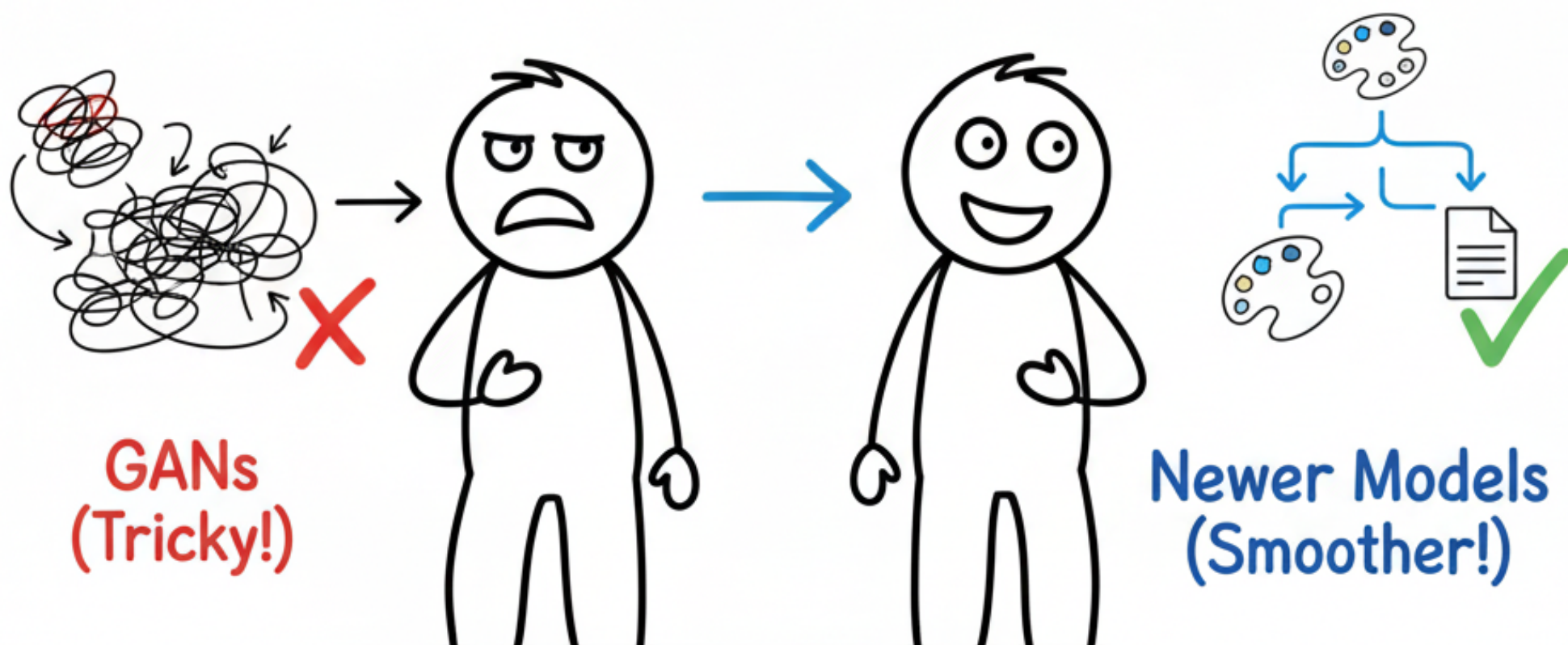
The powerful AI behind ChATGPT, DALL-E, and Midjourney!

Get ready to explore. 🚀



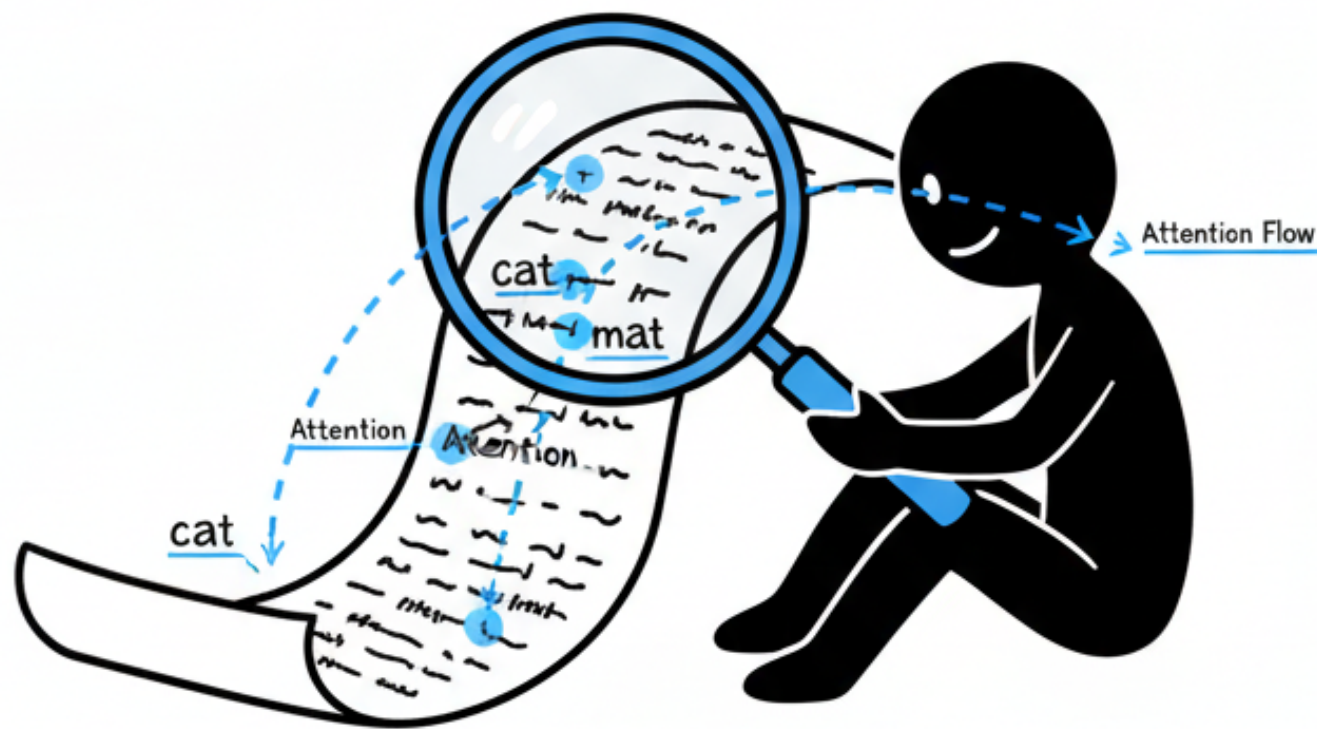
Evolving AI: Why New Architectures?

- While GANS are great, can be tricky and often excel in specific areas.
Newer models offer:
- Better Quality: More realistic and coherent outputs.
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- More Control: Easier to steer in a generation process.
Wider Scope: diverse data types and longer sequences (like full articles).



Meet Transformers: AI That Pays “Attention”

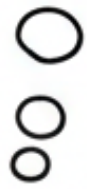
- Transformers are genius at understanding context & relationships of data sequences (like sentences or image pixels).
 - Key Idea: Self-Attention! It weighs of importance a different parts of input to understand their connections.
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- Analagy: Imagine reading the book; It pay more attention of certain words that give meanng of others.



Transformers for Text: Like a Super-Smart Author!

- Models like ChatGPT (which uses a Transformer architecture) predict the next most likely word in a sequence.
- They 'read' billions of texts, learning grammar, facts, and styles.
- Given a prompt, they 'write' by guessing the best next word, building full sentences, paragraphs, and even code!

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con
I cat

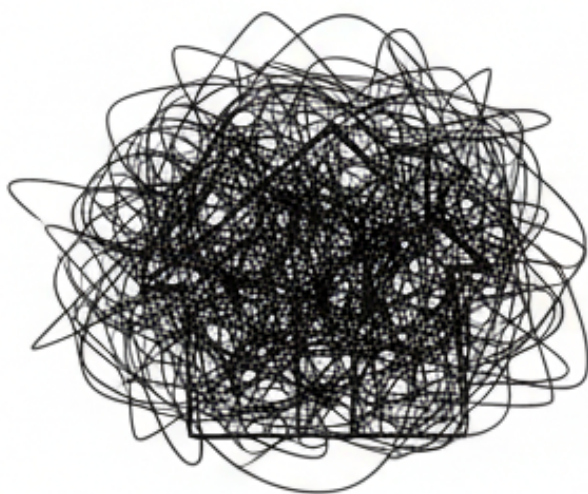


The cat, sat on the mat.
It looked
cute.

Diffusion Models: AI That Paints from Noise

- These are the powerhouses behind stunning image generation (DALL-E 2, Midjourney, Stable Diffusion)!
- Core Process: They learn to reverse a process of gradually adding noise to image.
- They start with pure noise and then denoise it step by step, gradually refining it into a clear, clear, coherent image based on your text prompt.

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Clear Image + Noise

NOISE! → Denoise

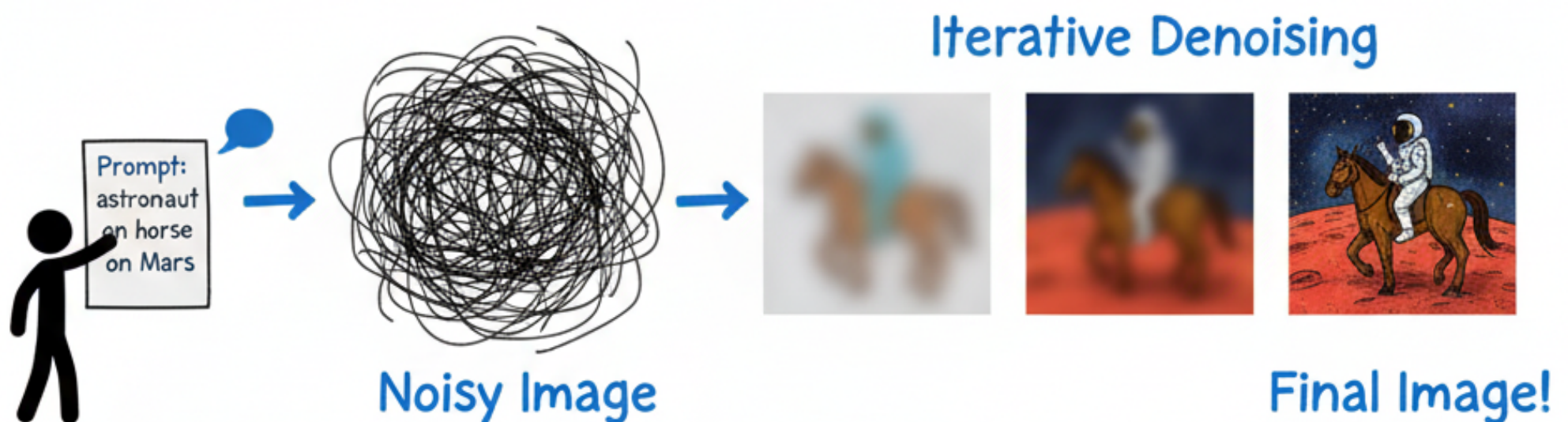


Noise → Clear Image

Diffusion for Images: Your Ideas, Visually Realized!

- Want "an astronaut riding a horse on Mars"?
- You give of text prompt.
- The model starts with noisy image.
- It iteraiarly removes noise, guided bt your prompt, until the reveals the stuniig tuning image you asked for.
- This itertive refiement creats incredibly detailed aof realistic visuals.

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Day 4 Takeaway: Powerful & Versatile Creators!

- Transformers excel at understanding context for sequential data (like text) while Diffusion Models master the art of generating high-quality images from noise.
- Together, they are redefining digital creation!



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**Next Up: Day Etay 5: - Ethical AI -
Naviating the Future Responsibly!**

Which model blows your mind more, Transfomes or Diffusion? Let us Inow! ↓

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SAVE this post for your deep dive into AI's cutting cettge! 📌