**Generative AI Fundamentals**

* **Generative AI** creates new content based on trained data.
* It mimics **creative skills**, unlike discriminative AI which mimics analytical skills.
* Uses models like **GANs**, **VAEs**, and **transformers**.
* **Foundation models** can be adapted for specific tasks.
* Applications span **text, image, audio, video, code**, and **virtual world creation**.

**Applications and Tools**

* Generative AI is used in **IT, DevOps, entertainment, finance, medicine, and HR**.
* It enhances **work efficiency** and creativity.
* **Text generation tools**: ChatGPT (great for conversation), Gemini (good for research).
* **Image generation tools**: DALL·E, Stable Diffusion, StyleGAN, Bing Image Creator, Adobe Firefly.
* **Code generation tools**: GPT, GitHub Copilot, PolyCoder, IBM Watson.
* Tools can generate, optimize, and translate code between languages.