

# Understanding Generative AI

ANTHROPIC

## What is Generative AI?

Generative AI refers to artificial intelligence systems that can create new content rather than just analyzing existing data.

### Traditional AI

Classifies emails as spam or not spam

### Generative AI

Can write a completely new email for you

## Three pillars that made it possible

### Algorithms

Transformer architecture (2017) revolutionized processing of long text passages

### Data explosion

Explosion of digital data (websites, code repositories, and other text) provided raw material for training these systems

### Computing power

Massive increases in computational power (chips like GPUs) made it possible to train these models on all the data

## How it works

### Pre-training

Models analyze billions of text examples, learning to predict what comes next

### Fine-tuning

Models are refined to follow instructions, be helpful, and avoid harmful content

### Deployment

Users provide prompts, and the model generates responses based on the prompts and patterns it learned during training

## Key capabilities

- Versatile language skills
- General-purpose abilities
- Learning from examples
- Connecting to external tools and data

## Current limitations

- Knowledge cutoff date
- Potential inaccuracies ("hallucinations")
- Context window constraints
- Challenges with complex reasoning and math