

# Transformer Applications Across Domains



## Natural Language Processing

- **GPT** - Text generation
- **BERT** - Language understanding
- **T5** - Text-to-text framework



## Machine Translation

- High-quality translation systems

Near human-level performance



## Computer Vision

- **ViT** - Vision Transformers
- **DINO** - Self-supervised learning
- **CLIP** - Vision-language models



## Speech Processing

- **Whisper** - Speech transcription
- Audio generation systems



## Multimodal AI

- **DALL-E** - Text-to-image
- **GPT-4** - Multi-capability AI
- **Flamingo** - Text + Image



## Time Series

- **Temporal Fusion Transformer**
- Forecasting and prediction



## Code Generation



## Biology & Science

- GitHub Copilot - AI pair programming
- AlphaCode - Competitive programming

- AlphaFold2
- Protein structure prediction