

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