

NLP Evolution: From Rules to Neural Networks

Rule-Based Systems

Hand-crafted rules & feature engineering

RNN & LSTM

Sequential processing with memory

Seq2Seq Models

Encoder-decoder for translation

Word Embeddings

Word2Vec, GloVe semantic relationships

Attention Mechanism

Dynamic focus on relevant parts

Next Generation →

Transfer learning & deep context

⚠ Limitations

Shallow representations • Task-specific training

💡 The Need

Better context understanding • Transfer learning capabilities