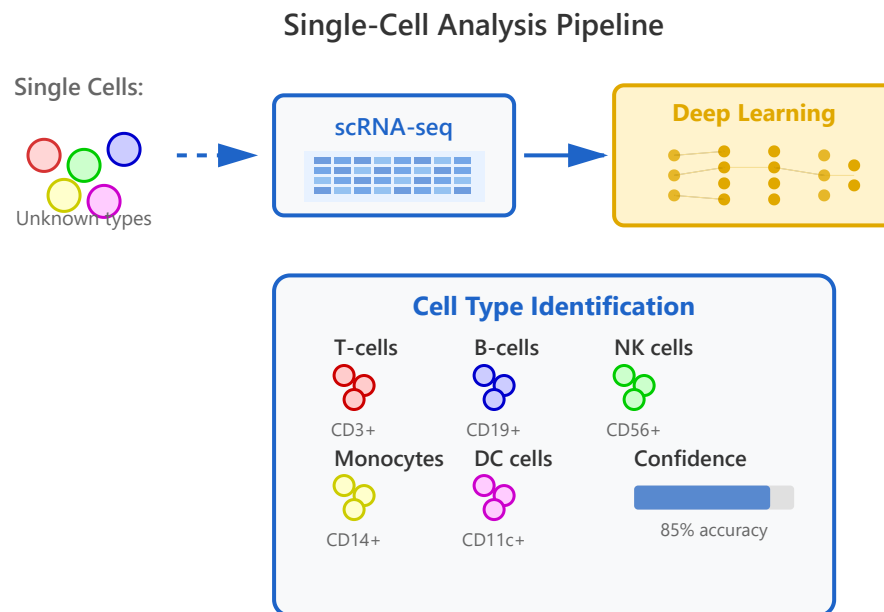


# Cell Type Classification



**Zero-shot Learning: Can identify novel cell types without prior training**  
Reference mapping → Batch correction → Uncertainty estimation

## Single-cell models

scBERT, Geneformer architectures

## Reference mapping

Atlas-based annotation

## Zero-shot learning

Novel cell type discovery

## Batch correction

Remove technical variation

## Uncertainty estimation

Confidence scoring