RoseTTAFold

Three-Track Architecture

Input Sequence

1D Track
(Sequence)

MSA Attention

FFN

MSA Attention

FFN

× N layers

2D Track
(Pairwise)

Pair Attention

Transition

Pair Attention

Transition

× N layers

3D Track
(Structure)

SE(3) Transform

Coord Update

SE(3) Transform

Coord Update

× N layers

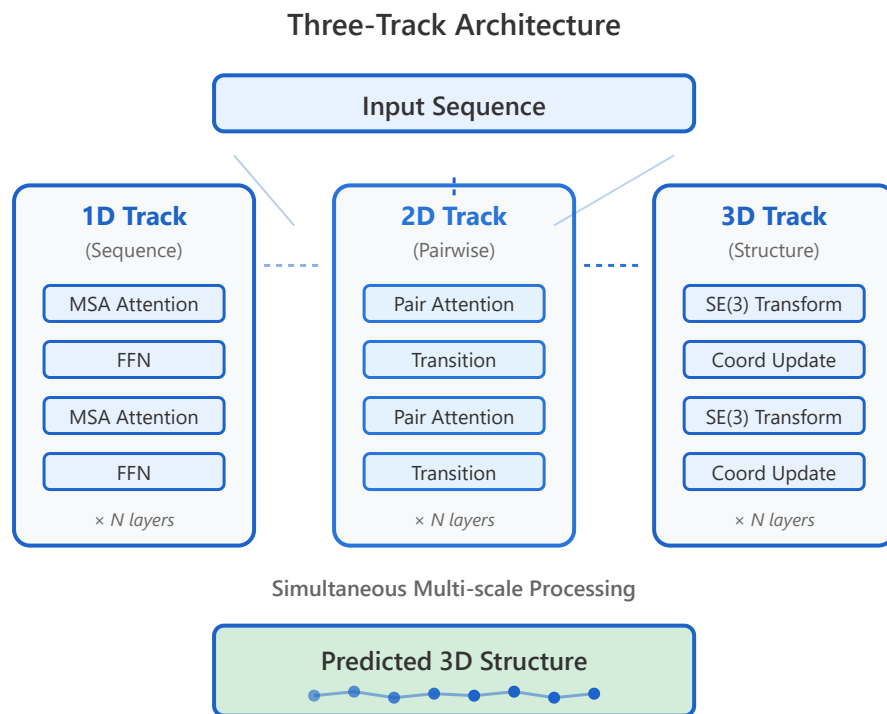Simultaneous Multi-scale Processing

Predicted 3D Structure

Three-track architecture
1D, 2D, 3D parallel processing

End-to-end learning
Direct structure prediction

Complex prediction
Protein-protein interactions

Speed advantages
Faster than AlphaFold2

Applications
Structure, function, design