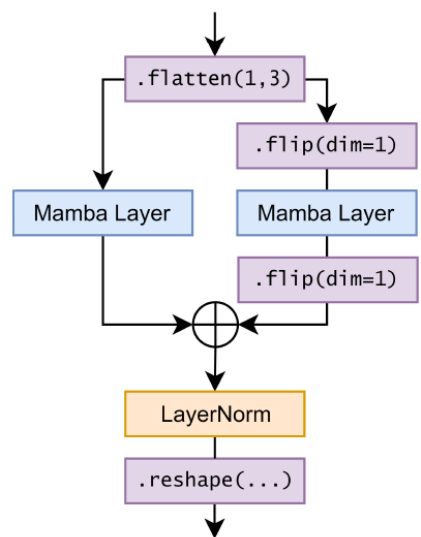
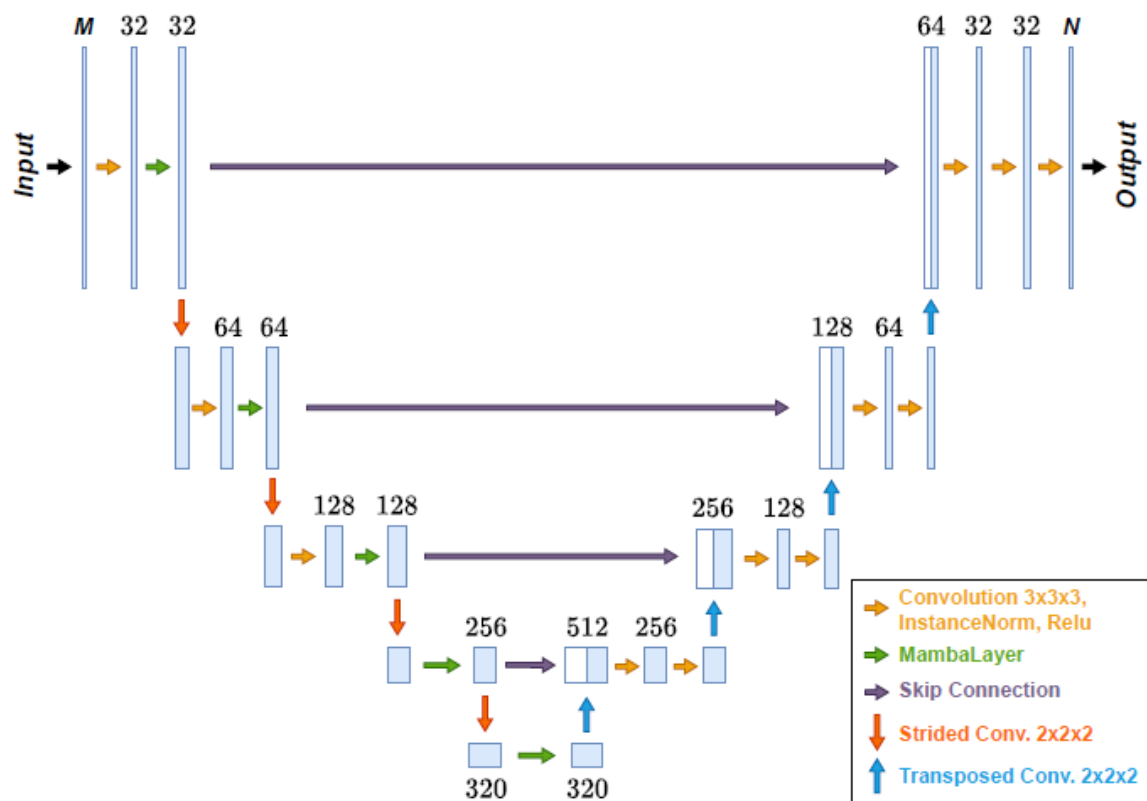


(a)



(b)

**Fig. 1:** (a) depicts our (unidirectional) Mamba Layer (in gray the original Mamba block), while (b) represents our bidirectional 3D Mamba layer, which includes (a).



**Fig. 2:** U-Net-like architecture integrating our proposed Mamba layers. By properly selecting the Mamba layers (turquoise arrows), *Unidirectional*, *Bidirectional*, and *Multi-directional* are obtained.