

# Coordinated Training Timeline: Curriculum Learning × Sparsity

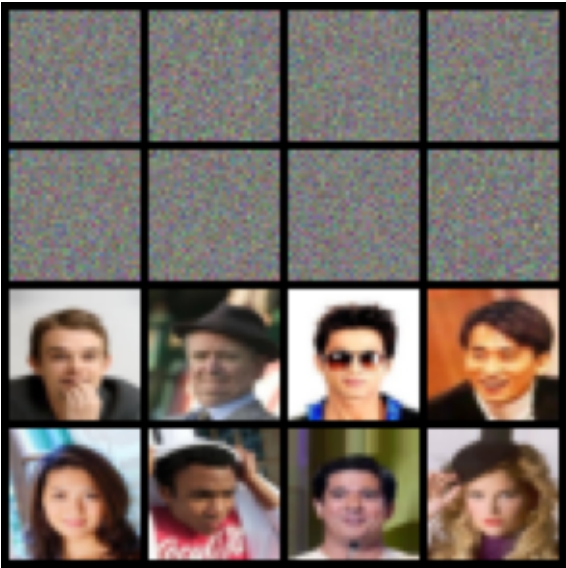
*Synchronizing noise-level curriculum with model capacity release*

**EARLY STAGE**  
 $t \in [0.8, 1.0]$

**MIDDLE STAGE**  
 $t \in [0.4, 1.0]$

**LATE STAGE**  
 $t \in [0.0, 1.0]$

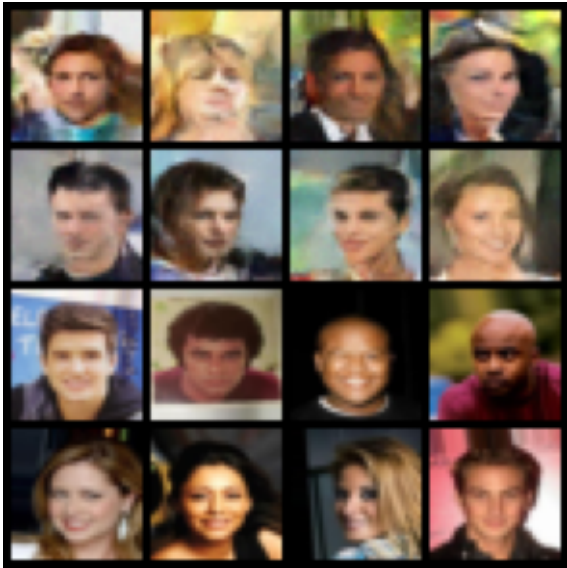
$M_1$  Coarse



Intermediate

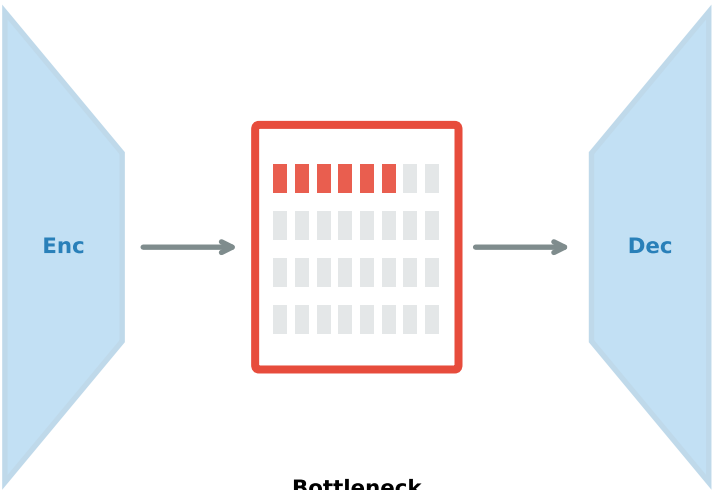


$M_2$  Fine

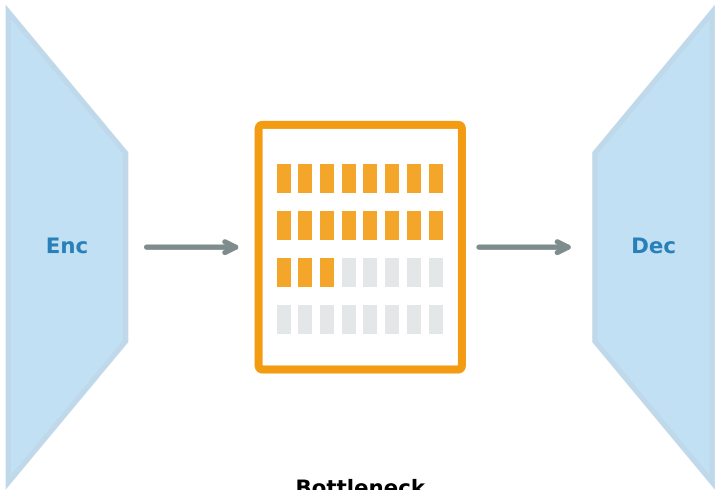


Noise Level  
& Output

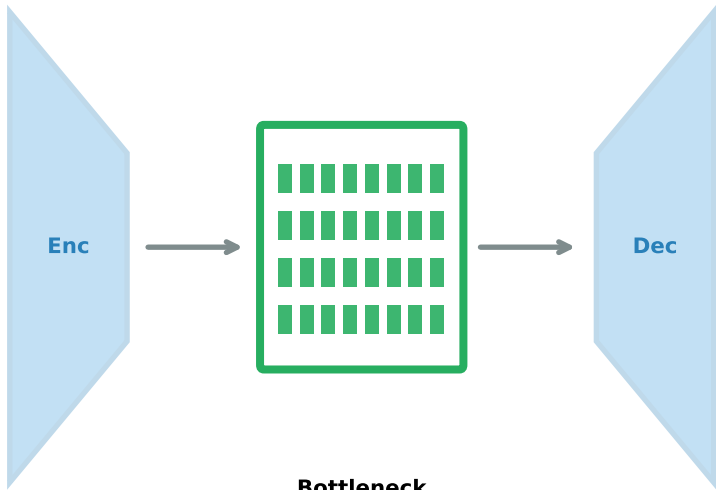
UNet  
Bottleneck



**Bottleneck**  
51/256 active

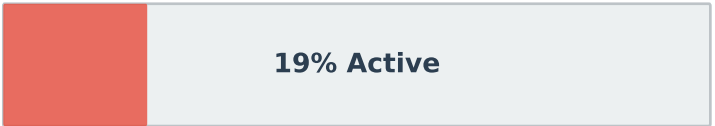


**Bottleneck**  
154/256 active



**Bottleneck**  
256/256 active

Capacity  
Released



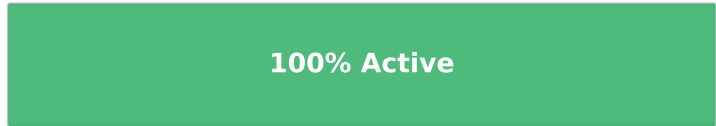
**19% Active**

Sparsity: 80%



**60% Active**

Sparsity: 40%



**100% Active**

Sparsity: 0%

*Key Insight: High Noise  $\leftrightarrow$  High Sparsity (few channels learn coarse  $M_1$ )  
Low Noise  $\leftrightarrow$  Low Sparsity (all channels active, new channels learn fine  $M_2$ )*