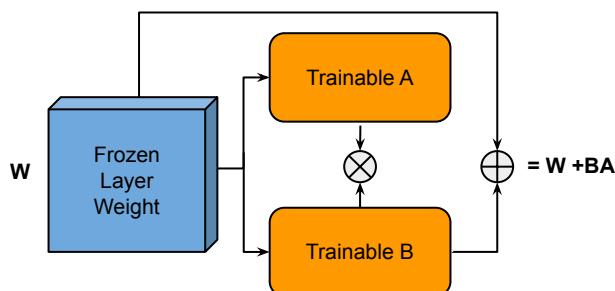


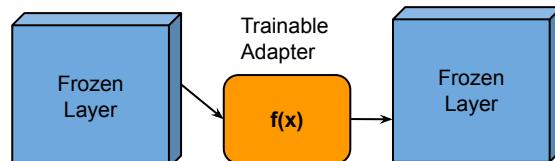
1. Parameter-Efficient Fine-Tuning(PEFT)

Goal: Adapt Behavior with Few Trainable Params

LoRA (Low-Rank Adaption)



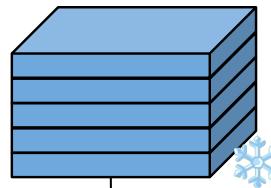
Adapter-Based Methods



Adapted Model Output
(Domain/Style Specific)

Pre-trained Base Diffusion Model

(Frozen Backbone, e.g., UNet)



2. ControlNet-Based Methods

Goal: Inject Spatial/Structural Control via Auxiliary Branch

Trainable Control Branch
(Copy of Backbone Structure)



Control Signal Input
(e.g. edge, depth, pose)



Blue = Frozen Parameters
Orange = Trainable Parameters
Arrows = Data Flow / Injection

Controllable Model Output
(Structure-Aligned)