

Image Classification

Compare Packages			
Feature / Aspect	Pytorch Image Models (timm)	MMPretrain	
License	Apache 2.0		
Primary Focus	Lightweight, easy-to-use library for pretrained image classification models	Comprehensive image classification framework: training, evaluation, customization	
Model Support	300+ models (EfficientNet, ViT, ConvNeXt, Swin, MobileNet, etc.)	500+ models (EfficientNet, ViT, ConvNeXt, Swin, MobileNet, etc.) Supports ensemble, hierarchical, multi-label	
Ease of Use	Very easy – load and run with a single line of code Great for fine-tuning and quick experiments	Config-driven, more complex but flexible	
Training Flexibility	Few official fine-tuning scripts; users must implement training loops for customization	Supports hooks, schedulers, custom datasets, mixed precision, DDP, logging, etc. Less convenient for custom training from scratch	
Deployment Support	No built-in deployment tools Manual export (TorchScript, ONNX)	ONNX, TensorRT, ncnn, PPLNN, OpenVINO (depends on model)	
Community & Ecosystem	Strong PyTorch community Used widely in research and Kaggle	Large, extensive OpenMMLab ecosystem	
Documentation	Basic API docs and GitHub examples	Extensive with tutorials and recipes	
Installation Complexity	Very easy	Complex (requires MMCV, MMEngine, CUDA compatibility)	
Compare Algorithms			
Model	ResNet	ConvNeXt	SwinV2
Type	CNN		Hierarchical Transformer
Year	2015	2022	2022
Architecture	CNN with Residual Blocks	ResNet with depthwise conv, GELU activation, and LayerNorm	Shifted window-based transformer
Speed	Fast	Medium	Slow
Accuracy (%) of ImageNet-1K	Fair (80.12)	Excellent (88.86)	Excellent (87.59)
Best For	Good baseline; suitable for edge devices	High accuracy requirement, insufficient sample size to train a transformer	High accuracy requirement, large scale datasets, scenario requires global attention
Limitations	Limited capacity; struggles with small objects	Higher computational cost than ResNet	Slower and more complex; requires more memory; not ideal for edge deployment
Corresponding Package	Timm, MMPretrain	MMPretrain (Timm supports but sample not provided)	MMPretrain (Timm supports but sample not provided)
TL;DR			
If you want quick prototyping - timm			
If you want easy implementation of custom settings - MMpretrain			