1. Pre-Trained Models for Image Processing

1.1 ResNet (Residual Networks)

- **Developed by:** Microsoft Research
- **Usage:** Image classification, object detection, segmentation.
- **Variants:** ResNet-18, ResNet-34, ResNet-50, ResNet-101, ResNet-152.

1.2 VGG (Visual Geometry Group)

- **Developed by:** Oxford's Visual Geometry Group
- **Usage:** Image classification, transfer learning.
- **Variants:** VGG-16, VGG-19.

1.3 Inception (GoogLeNet)

- **Developed by:** Google
- **Usage:** Image recognition, classification.
- **Variants:** Inception-v1, Inception-v3, Inception-v4.

1.4 EfficientNet

- **Developed by:** Google AI
- **Usage:** Image classification, efficient processing.
- **Variants:** EfficientNet-B0 to EfficientNet-B7.

1.5 MobileNet

- **Developed by:** Google
- **Usage:** Image classification on mobile/edge devices.
- **Variants:** MobileNetV1, MobileNetV2, MobileNetV3.

1.6 DenseNet (Densely Connected Convolutional Networks)

- **Developed by:** Facebook AI Research
- **Usage:** Image classification, segmentation.
- **Variants:** DenseNet-121, DenseNet-169, DenseNet-201.

1.7 Vision Transformer (ViT)

- **Developed by:** Google Research
- **Usage:** Image classification using transformers.
- **Variants:** ViT-B/16, ViT-L/32.

1.8 AlexNet

- **Developed by:** University of Toronto
- **Usage:** Image classification, foundational deep learning model.

- **Variants:** Standard AlexNet.

1.9 Xception

- **Developed by:** Google
- **Usage:** Image classification, inspired by Inception.
- **Variants:** Standard Xception.

1.10 NASNet (Neural Architecture Search Network)

- **Developed by:** Google
- **Usage:** Image classification, automatically searched architecture.
- **Variants:** NASNet-A, NASNet-B, NASNet-C.

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2. Pre-Trained Models for Text Processing

2.1 BERT (Bidirectional Encoder Representations from Transformers)

- **Developed by:** Google
- **Usage:** Sentiment analysis, NER, question answering.
- **Variants:** RoBERTa, DistilBERT, ALBERT.

2.2 GPT (Generative Pre-trained Transformer)

- **Developed by:** OpenAI
- **Usage:** Text generation, summarization, translation.
- **Variants:** GPT-2, GPT-3, GPT-4.

2.3 T5 (Text-To-Text Transfer Transformer)

- **Developed by:** Google
- **Usage:** Translation, summarization, text classification.
- **Variants:** mT5, T5-small, T5-large.

2.4 XLNet

- **Developed by:** Google/CMU
- **Usage:** Text classification, sentiment analysis, QA.
- **Variants:** Base, large.

2.5 ERNIE (Enhanced Representation through Knowledge Integration)

- **Developed by:** Baidu
- **Usage:** Text classification, QA with external knowledge.
- **Variants:** ERNIE 1.0, ERNIE 2.0.

2.6 BART (Bidirectional and Auto-Regressive Transformers)

- **Developed by:** Facebook AI
- **Usage:** Text generation, summarization, translation.
- **Variants:** Standard BART.

2.7 DeBERTa (Decoding-enhanced BERT with Disentangled Attention)

- **Developed by:** Microsoft
- **Usage:** NER, sentiment analysis.
- **Variants:** DeBERTa-v1, DeBERTa-v2.

2.8 Transformer-XL

- **Developed by:** Google
- **Usage:** Language modeling with long context handling.
- **Variants:** Standard Transformer-XL.

2.9 UniLM (Unified Language Model Pre-training)

- **Developed by:** Microsoft
- **Usage:** Text generation, translation.
- **Variants:** UniLMv2.

2.10 OpenAI Codex

- **Developed by:** OpenAI
- **Usage:** Code generation, understanding, NLP tasks.
- **Variants:** Standard Codex.

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3. Pre-Trained Models for Object Detection

3.1 YOLO (You Only Look Once)

- **Developed by:** Joseph Redmon et al.
- **Usage:** Real-time object detection.
- **Variants:** YOLOv3, YOLOv4, YOLOv5.

3.2 Faster R-CNN

- **Developed by:** Microsoft Research
- **Usage:** Object detection with region proposals.
- **Variants:** Based on ResNet, VGG.

3.3 SSD (Single Shot MultiBox Detector)

- **Developed by:** Google
- **Usage:** Real-time object detection.
- **Variants:** SSD300, SSD512.

3.4 RetinaNet

- **Developed by:** Facebook AI Research
- **Usage:** Object detection with focal loss.
- **Variants:** ResNet-50, ResNet-101.

3.5 EfficientDet

- **Developed by:** Google AI
- **Usage:** Efficient object detection.
- **Variants:** EfficientDet-D0 to EfficientDet-D7.

3.6 Mask R-CNN

- **Developed by:** Facebook AI Research
- **Usage:** Object detection and instance segmentation.
- **Variants:** Based on ResNet, FPN.

3.7 CenterNet

- **Developed by:** Microsoft Research Asia
- **Usage:** Keypoint-based object detection.
- **Variants:** Hourglass, ResNet variants.

3.8 Detectron2

- **Developed by:** Facebook AI Research
- **Usage:** Object detection and segmentation.
- **Variants:** Based on ResNet, FPN.

3.9 YOLOv7

- **Developed by:** Alexey Bochkovskiy et al.
- **Usage:** Latest YOLO model for object detection.
- **Variants:** YOLOv7-tiny, YOLOv7-large.

3.10 Cascade R-CNN

- **Developed by:** Microsoft Research Asia
- **Usage:** Multi-stage object detection.
- **Variants:** Based on ResNet.

4. Pre-Trained Models for Face Recognition

4.1 FaceNet

- **Developed by:** Google
- **Usage:** Face recognition, clustering.
- **Variants:** Standard FaceNet.

4.2 VGGFace

- **Developed by:** Visual Geometry Group, Oxford
- **Usage:** Face identification, verification.
- **Variants:** VGGFace, VGGFace2.

4.3 DeepFace

- **Developed by:** Facebook AI Research
- **Usage:** Face recognition with deep learning.
- **Variants:** Standard DeepFace.

4.4 OpenFace

- **Developed by:** Carnegie Mellon University
- **Usage:** Real-time face recognition.
- **Variants:** Standard OpenFace.

4.5 ArcFace

- **Developed by:** Imperial College London
- **Usage:** High-precision face recognition.
- **Variants:** Standard ArcFace.

4.6 Dlib

- **Developed by:** Davis King
- **Usage:** Face detection, face landmark detection.
- **Variants:** Standard Dlib face recognition.

4.7 InsightFace

- **Developed by:** Deep Insight
- **Usage:** Face recognition with 3D models.
- **Variants:** Standard InsightFace.

4.8 SphereFace

- **Developed by:** Tsinghua University
- **Usage:** Face recognition with angular margin.
- **Variants:** Standard SphereFace.

4.9 CosFace

- **Developed by:** Yandong Wen et al.
- **Usage:** Large-margin face recognition.
- **Variants:** Standard CosFace.

4.10 RetinaFace

- **Developed by:** Jiankang Deng et al.
- **Usage:** Face detection with landmark localization.
- **Variants:** Standard RetinaFace.