# TensorFlow Community Models

This repository provides a curated list of the GitHub repositories with machine learning models and implementations powered by TensorFlow 2.

**Note**: Contributing companies or individuals are responsible for maintaining their repositories.

## Computer Vision

### Image Recognition

| Model | Paper | Features | Maintainer |
|---|---|---|---|
| DenseNet 169 | Densely Connected Convolutional Networks | • FP32 Inference | Intel |
| Inception V3 | Rethinking the Inception Architecture for Computer Vision | • Int8 Inference<br>• FP32 Inference | Intel |
| Inception V4 | Inception-v4, Inception-ResNet and the Impact of Residual Connections on Learning | • Int8 Inference<br>• FP32 Inference | Intel |
| MobileNet V1 | MobileNets: Efficient Convolutional Neural Networks for Mobile Vision Applications | • Int8 Inference<br>• FP32 Inference | Intel |
| ResNet 101 | Deep Residual Learning for Image Recognition | • Int8 Inference<br>• FP32 Inference | Intel |
| ResNet 50 | Deep Residual Learning for Image Recognition | • Int8 Inference<br>• FP32 Inference | Intel |
| ResNet 50v1.5 | Deep Residual Learning for Image Recognition | • Int8 Inference<br>• FP32 Inference<br>• FP32 Training | Intel |
| EfficientNet | EfficientNet: Rethinking Model Scaling for Convolutional Neural Networks | • Automatic mixed precision<br>• Horovod Multi-GPU training (NCCL)<br>• Multi-node training on a Pyxis/Enroot Slurm cluster<br>• XLA | NVIDIA |

### Object Detection

| Model | Paper | Features | Maintainer |
|---|---|---|---|

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|---|---|---|---|
| R-FCN | R-FCN: Object Detection via Region-based Fully Convolutional Networks | • Int8 Inference<br>• FP32 Inference | Intel |
| SSD-MobileNet | MobileNets: Efficient Convolutional Neural Networks for Mobile Vision Applications | • Int8 Inference<br>• FP32 Inference | Intel |
| SSD-ResNet34 | SSD: Single Shot MultiBox Detector | • Int8 Inference<br>• FP32 Inference<br>• FP32 Training | Intel |

### Segmentation

| Model | Paper | Features | Maintainer |
|---|---|---|---|
| Mask R-CNN | Mask R-CNN | • Automatic Mixed Precision<br>• Multi-GPU training support with Horovod<br>• TensorRT | NVIDIA |
| U-Net Medical Image Segmentation | U-Net: Convolutional Networks for Biomedical Image Segmentation | • Automatic Mixed Precision<br>• Multi-GPU training support with Horovod<br>• TensorRT | NVIDIA |

## Natural Language Processing

| Model | Paper | Features | Maintainer |
|---|---|---|---|
| BERT | BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding | • FP32 Inference<br>• FP32 Training | Intel |
| BERT | BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding | • Horovod Multi-GPU<br>• Multi-node with Horovod and Pyxis/Enroot Slurm cluster<br>• XLA<br>• Automatic mixed precision<br>• LAMB | NVIDIA |
| ELECTRA | ELECTRA: Pre-training Text Encoders as Discriminators Rather Than Generators | • Automatic Mixed Precision<br>• Multi-GPU training support with Horovod<br>• Multi-node training on a Pyxis/Enroot Slurm cluster | NVIDIA |
| GNMT | Google's Neural Machine Translation System: Bridging the Gap between Human and Machine Translation | • FP32 Inference | Intel |
| Transformer- | Attention Is All You Need | • FP32 Inference | Intel |

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|---|---|---|---|
| LT (Official) | | | |
| Transformer-LT (MLPerf) | Attention Is All You Need | • FP32 Training | Intel |

## Recommendation Systems

| Model | Paper | Features | Maintainer |
|---|---|---|---|
| Wide & Deep | Wide & Deep Learning for Recommender Systems | • FP32 Inference<br>• FP32 Training | Intel |
| Wide & Deep | Wide & Deep Learning for Recommender Systems | • Automatic mixed precision<br>• Multi-GPU training support with Horovod<br>• XLA | NVIDIA |
| DLRM | Deep Learning Recommendation Model for Personalization and Recommendation Systems | • Automatic Mixed Precision<br>• Hybrid-parallel multiGPU training using Horovod all2all<br>• Multinode training for Pyxis/Enroot Slurm clusters<br>• XLA<br>• Criteo dataset preprocessing with Spark on GPU | NVIDIA |

## Contributions

If you want to contribute, please review the contribution guidelines.