Figure 1: Logo

TensorFlow Research Models

This directory contains code implementations and pre-trained models of published research papers.

The research models are maintained by their respective authors.

Table of Contents

Modeling Libraries and Models

Directory	Name	Description	Maintainer(s)
object_detection	TensorFlow Object Detection API	A framework that makes it easy to construct, train and deploy object detection modelsA collection of object detection models pre-trained on the COCO dataset, the Kitti dataset, the Open Images dataset, the AVA v2.1 dataset, and the iNaturalist Species Detection Dataset	jch1, tombstone, pkulzc
slim	TensorFlow-Slim Image Classification Model Library	A lightweight high-level API of TensorFlow for defining, training and evaluating image classification models • Inception V1/V2/V3/V4 • Inception-ResNet-v2 • ResNet V1/V2 • VGG 16/19 • MobileNet V1/V2/V3 • NASNet-A_Mobile/Large • PNASNet-5_Large/Mobile	sguada, marksandler2

Models and Implementations

Computer Vision

Directory	Paper(s)	Conference	Maintainer(s)
attention_ocr	Attention-based Extraction of Structured Information from Street View Imagery	ICDAR 2017	xavigibert
autoaugment	[1] AutoAugment[2] Wide Residual Networks[3] Shake-Shake regularization[4] ShakeDrop Regularization for Deep Residual Learning	[1] CVPR 2019[2] BMVC 2016 [3] ICLR 2017 [4] ICLR 2018	barretzoph

Directory	Paper(s)	Conference	Maintainer(s)
deeplab	[1] DeepLabv1: Semantic Image Segmentation with Deep Convolutional Nets and Fully Connected CRFs[2] DeepLabv2: Semantic Image Segmentation with Deep Convolutional Nets, Atrous Convolution, and Fully Connected CRFs[3] DeepLabv3: Rethinking Atrous Convolution for Semantic Image Segmentation[4] DeepLabv3+: Encoder-Decoder with Atrous Separable Convolution for Semantic Image Segmentation	[1] ICLR 2015 [2] TPAMI 2017 [4] ECCV 2018	aquariusjay, yknzhu

Directory	Paper(s)	Conference	Maintainer(s)
delf	[1] DELF (DEep Local Features): Large-Scale Image Retrieval with Attentive Deep Local Features[2] Detect-to-Retrieve: Efficient Regional Aggregation for Image Search[3] DELG (DEep Local and Global features): Unifying Deep Local and Global Features for Image Search[4] GLDv2: Google Landmarks Dataset v2 – A Large-Scale Benchmark for Instance-Level Recognition and Retrieval	[1] ICCV 2017[2] CVPR 2019[4] CVPR 2020	andrefaraujo
lstm_object_ detection	Mobile Video Object Detection with Temporally-Aware Feature Maps	CVPR 2018	yinxiaoli, yongzhe2160, lzyuan

Directory	Paper(s)	Conference	Maintainer(s)
marco	MARCO: Classification of crystallization outcomes using deep convolutional neural networks		vincentvanhoucke
vid2depth	Unsupervised Learning of Depth and Ego-Motion from Monocular Video Using 3D Geometric Constraints	CVPR 2018	rezama

Natural Language Processing

Directory	Paper(s)	Conference	Maintainer(s)
adversarial_text	[1] Adversarial Training Methods for Semi-Supervised Text Classification[2] Semi-supervised Sequence Learning	[1] ICLR 2017[2] NIPS 2015	rsepassi, a-dai
cvt_text	Semi-Supervised Sequence Modeling with Cross-View Training	EMNLP 2018	clarkkev, lmthang

Audio and Speech

Directory	Paper(s)	Conference	Maintainer(s)
audioset	[1] Audio Set: An ontology and human-labeled dataset for audio events[2] CNN Architectures for Large-Scale Audio Classification	ICASSP 2017	plakal, dpwe
deep_speech	Deep Speech 2	ICLR 2016	yhliang2018

Reinforcement Learning

Directory	Paper(s)	Conference	Maintainer(s)
efficient-hrl	[1] Data-Efficient Hierarchical Reinforcement Learning[2] Near-Optimal Representation Learning for Hierarchical Reinforcement Learning	[1] NIPS 2018 [2] ICLR 2019	ofirnachum

Directory	Paper(s)	Conference	Maintainer(s)
pcl_rl	[1] Improving Policy Gradient by Exploring Under-appreciated Rewards[2] Bridging the Gap Between Value and Policy Based Reinforcement Learning[3] Trust-PCL: An Off-Policy Trust Region Method for Continuous Control	[1] ICLR 2017[2] NIPS 2017[3] ICLR 2018	ofirnachum

Others

Directory	Paper(s)	Conference	Maintainer(s)
lfads	LFADS - Latent Factor Analysis via Dynamical Systems		jazcollins, sussillo
rebar	REBAR: Low-variance, unbiased gradient estimates for discrete latent variable models	NIPS 2017	gjtucker

Old Models and Implementations in TensorFlow 1

:warning: If you are looking for old models, please visit the Archive branch.

Contributions

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