先睹为快:神经网络顶会ICLR 2019论文热点分析

原创： lqfarmer 深度学习与NLP 今天

ICLR-2019（International Conference on Learning Representations 2019），将于2019年5月9日在美国路易斯安那州的新奥尔良举行，这也是2019年最新的一个国际性的AI顶会。目前，ICLR-2019的最新接受的论文已经Release出来了，本文对本届会议接受的论文进行整理，按照统计方法，抽取出了其中集中程度最高的27个主题，并抽样了每个主题下的一些最新论文，提供给需要的朋友周末充电。

ICLR-2019接受全部论文地址

https://openreview.net/group?id=ICLR.cc/2019/Conference#accepted-oral-papers

主题热点

Deep reinforcement learning
Generative adversarial networks
Deep learning
Deep neural Network
Domain adaptation
Recurrent neural network
Neural architecture search
Convolutional networks network
Deep networks

Graph neural network

Bayesian neural Network

Variational autoencoders

Gradient descent optimization

Unsupervised learning

Adversarial examples/Adversarial attacks/Adversarial training

Imitation learning

Generalization bounds

Monte carlo method

Representation learning

Neural program

Experience replay

Batch normalization

Word embeddings

Neural machine translation

Transfer learning

Program synthesis

Image-to-image translation

热点论文推荐

Reinforcement learning

Algorithmic Framework for Model-based Deep Reinforcement Learning with Theoretical Guarantees

M^3RL: Mind-aware Multi-agent Management Reinforcement Learning

Information-Directed Exploration for Deep Reinforcement Learning

Near-Optimal Representation Learning for Hierarchical Reinforcement Learning

Adversarial Imitation via Variational Inverse Reinforcement Learning

Deep reinforcement learning with relational inductive biases

Variance Reduction for Reinforcement Learning in Input-Driven Environments

Recall Traces: Backtracking Models for Efficient Reinforcement Learning

Hierarchical Reinforcement Learning via Advantage-Weighted Information Maximization

Contingency-Aware Exploration in Reinforcement Learning

Learning to Schedule Communication in Multi-agent Reinforcement Learning

Modeling the Long Term Future in Model-Based Reinforcement Learning

Visceral Machines: Reinforcement Learning with Intrinsic Physiological Rewards

From Language to Goals: Inverse Reinforcement Learning for Vision-Based Instruction Following

Recurrent Experience Replay in Distributed Reinforcement Learning

Probabilistic Recursive Reasoning for Multi-Agent Reinforcement Learning

NADPEx: An on-policy temporally consistent exploration method for deep reinforcement learning

Hierarchical Reinforcement Learning with Hindsight

Generative adversarial networks

A generative adversarial network for style modeling in a text-to-speech system

KnockoffGAN: Generating Knockoffs for Feature Selection using Generative Adversarial Networks

ROBUST ESTIMATION VIA GENERATIVE ADVERSARIAL NETWORKS

Improving Generalization and Stability of Generative Adversarial Networks

On Self Modulation for Generative Adversarial Networks

Scalable Unbalanced Optimal Transport using Generative Adversarial Networks

Visualizing and Understanding Generative Adversarial Networks

Learning from Incomplete Data with Generative Adversarial Networks

A Direct Approach to Robust Deep Learning Using Adversarial Networks

A Variational Inequality Perspective on Generative Adversarial Networks

On Computation and Generalization of Generative Adversarial Networks under Spectrum Control

RelGAN: Relational Generative Adversarial Networks for Text Generation

Diversity-Sensitive Conditional Generative Adversarial Networks

Scalable Reversible Generative Models with Free-form Continuous Dynamics

Optimal Transport Maps For Distribution Preserving Operations on Latent Spaces of Generative Models

Do Deep Generative Models Know What They Don't Know?

Learning Localized Generative Models for 3D Point Clouds via Graph Convolution

Distribution-Interpolation Trade off in Generative Models

Kernel Change-point Detection with Auxiliary Deep Generative Models

Multi-Domain Adversarial Learning

SPIGAN: Privileged Adversarial Learning from Simulation

Deep learning

Deep Lagrangian Networks: Using Physics as Model Prior for Deep Learning

SGD Converges to Global Minimum in Deep Learning via Star-convex Path

Dynamic Sparse Graph for Efficient Deep Learning

Quasi-hyperbolic momentum and Adam for deep learning

DeepOBS: A Deep Learning Optimizer Benchmark Suite

Deep Learning 3D Shapes Using Alt-az Anisotropic 2-Sphere Convolution

DELTA: DEEP LEARNING TRANSFER USING FEATURE MAP WITH ATTENTION FOR CONVOLUTIONAL NETWORKS

Deep learning generalizes because the parameter-function map is biased towards simple functions

Deep neural Network

An Empirical Study of Example Forgetting during Deep Neural Network Learning

Energy-Constrained Compression for Deep Neural Networks via Weighted Sparse Projection and Layer Input Masking

Neural Persistence: A Complexity Measure for Deep Neural Networks Using Algebraic Topology

Visual Explanation by Interpretation: Improving Visual Feedback Capabilities of Deep Neural Networks

On the loss landscape of a class of deep neural networks with no bad local valleys

Double Viterbi: Weight Encoding for High Compression Ratio and Fast On-Chip Reconstruction for Deep Neural Network

Minimal Images in Deep Neural Networks: Fragile Object Recognition in Natural Images

Bias-Reduced Uncertainty Estimation for Deep Neural Classifiers

Adaptive Estimators Show Information Compression in Deep Neural Networks

Domain adaptation

Augmented Cyclic Adversarial Learning for Low Resource Domain Adaptation

Unsupervised Domain Adaptation for Distance Metric Learning

ADVERSARIAL DOMAIN ADAPTATION FOR STABLE BRAIN-MACHINE INTERFACES

LEARNING FACTORIZED REPRESENTATIONS FOR OPEN-SET DOMAIN ADAPTATION

Improving the Generalization of Adversarial Training with Domain Adaptation

Regularized Learning for Domain Adaptation under Label Shifts

Recurrent neural network

Ordered Neurons: Integrating Tree Structures into Recurrent Neural Networks

A MAX-AFFINE SPLINE PERSPECTIVE OF RECURRENT NEURAL NETWORKS

Quaternion Recurrent Neural Networks

Variational Smoothing in Recurrent Neural Network Language Models

Generalized Tensor Models for Recurrent Neural Networks

AntisymmetricRNN: A Dynamical System View on Recurrent Neural Networks

Neural architecture search

Efficient Multi-Objective Neural Architecture Search via Lamarckian Evolution

ProxylessNAS: Direct Neural Architecture Search on Target Task and Hardware

Learnable Embedding Space for Efficient Neural Architecture Compression

Graph HyperNetworks for Neural Architecture Search

SNAS: stochastic neural architecture search

DARTS: Differentiable Architecture Search

Convolutional networks network

Deep Bayesian Convolutional Networks with Many Channels are Gaussian Processes

LanczosNet: Multi-Scale Deep Graph Convolutional Networks

Deep Convolutional Networks as shallow Gaussian Processes

STCN: Stochastic Temporal Convolutional Networks

Convolutional Neural Networks on Non-uniform Geometrical Signals Using Euclidean Spectral Transformation

A rotation-equivariant convolutional neural network model of primary visual cortex

Human-level Protein Localization with Convolutional Neural Networks

Deep networks

Critical Learning Periods in Deep Networks

Accumulation Bit-Width Scaling For Ultra-Low Precision Training Of Deep Networks

RotDCF: Decomposition of Convolutional Filters for Rotation-Equivariant Deep Networks

Predicting the Generalization Gap in Deep Networks with Margin Distributions

Deterministic PAC-Bayesian generalization bounds for deep networks via generalizing noise-resilience

Graph neural network

How Powerful are Graph Neural Networks?

Capsule Graph Neural Network

Adversarial Attacks on Graph Neural Networks via Meta Learning

Supervised Community Detection with Line Graph Neural Networks

Bayesian neural Network

Deterministic Variational Inference for Robust Bayesian Neural Networks

Function Space Particle Optimization for Bayesian Neural Networks

Adv-BNN: Improved Adversarial Defense through Robust Bayesian Neural Network

FUNCTIONAL VARIATIONAL BAYESIAN NEURAL NETWORKS

Variational autoencoders

MAE: Mutual Posterior-Divergence Regularization for Variational AutoEncoders

Learning Latent Superstructures in Variational Autoencoders for Deep Multidimensional Clustering

Variational Autoencoders with Jointly Optimized Latent Dependency Structure

Lagging Inference Networks and Posterior Collapse in Variational Autoencoders

Gradient descent optimization

Gradient descent aligns the layers of deep linear networks

Gradient Descent Provably Optimizes Over-parameterized Neural Networks

A Convergence Analysis of Gradient Descent for Deep Linear Neural Networks

Fluctuation-dissipation relations for stochastic gradient descent

Unsupervised learning

Learning Unsupervised Learning Rules

Unsupervised Learning of the Set of Local Maxima

Unsupervised Learning via Meta-Learning

Adversarial examples/Adversarial attacks/Adversarial training

Prior Convictions: Black-box Adversarial Attacks with Bandits and Priors

PeerNets: Exploiting Peer Wisdom Against Adversarial Attacks

The Limitations of Adversarial Training and the Blind-Spot Attack

Generalizable Adversarial Training via Spectral Normalization

Cost-Sensitive Robustness against Adversarial Examples

Characterizing Audio Adversarial Examples Using Temporal Dependency

Are adversarial examples inevitable?

Imitation learning

Sample Efficient Imitation Learning for Continuous Control

Discriminator-Actor-Critic: Addressing Sample Inefficiency and Reward Bias in

Adversarial Imitation Learning

Generative predecessor models for sample-efficient imitation learning

Generalization bounds

Non-vacuous Generalization Bounds at the ImageNet Scale: a PAC-Bayesian Compression Approach

Data-Dependent Coresets for Compressing Neural Networks with Applications to Generalization Bounds

Monte carlo method

Probabilistic Planning with Sequential Monte Carlo methods

Bayesian Modelling and Monte Carlo Inference for GAN

Doubly Reparameterized Gradient Estimators for Monte Carlo Objectives

Representation learning

Measuring Compositionality in Representation Learning

SOM-VAE: Interpretable Discrete Representation Learning on Time Series

The Laplacian in RL: Learning Representations with Efficient Approximations

Learning Actionable Representations with Goal Conditioned Policies

Learning Programmatically Structured Representations with Perceptor Gradients

Neural program

Neural Program Repair by Jointly Learning to Localize and Repair

Experience replay

DHER: Hindsight Experience Replay for Dynamic Goals

Competitive experience replay

Batch normalization

Towards Understanding Regularization in Batch Normalization

A Mean Field Theory of Batch Normalization

Theoretical Analysis of Auto Rate-Tuning by Batch Normalization

Word embeddings

Understanding Composition of Word Embeddings via Tensor Decomposition

Unsupervised Hyper-alignment for Multilingual Word Embeddings

Poincare Glove: Hyperbolic Word Embeddings

Neural machine translation

Identifying and Controlling Important Neurons in Neural Machine Translation

Multilingual Neural Machine Translation with Knowledge Distillation

Multilingual Neural Machine Translation With Soft Decoupled Encoding

Transfer learning

K For The Price Of 1: Parameter Efficient Multi-task And Transfer Learning

Transfer Learning for Sequences via Learning to Collocate

An analytic theory of generalization dynamics and transfer learning in deep linear networks

Program synthesis

Execution-Guided Neural Program Synthesis

Learning a Meta-Solver for Syntax-Guided Program Synthesis

Synthetic Datasets for Neural Program Synthesis

Image-to-image translation

Harmonic Unpaired Image-to-image Translation

Exemplar Guided Unsupervised Image-to-Image Translation with Semantic Consistency

Instance-aware Image-to-Image Translation