
2D/3D Pose Estimation and Action Recognition Using Multitask Deep Learning

Type Conference Paper
Author Diogo C. Luvizon
Author David Picard
Author Hedi Tabia
URL http://openaccess.thecvf.com/content_cvpr_2018/html/Luvizon_2D3D_Pose_Estimation_CVPR_2018_paper.html
Pages 5137-5146
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Library Catalog openaccess.thecvf.com
Conference Name Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition
Date Added 20.9.2018, 11:17:31
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Attachments

- Snapshot

Adaptation Regularization: A General Framework for Transfer Learning

Type Journal Article
Author M. Long
Author J. Wang
Author G. Ding
Author S. J. Pan
Author P. S. Yu
Volume 26
Issue 5
Pages 1076-1089
Publication IEEE Transactions on Knowledge and Data Engineering
ISSN 1041-4347
Date May 2014
DOI 10.1109/TKDE.2013.111
Library Catalog IEEE Xplore

Abstract Domain transfer learning, which learns a target classifier using labeled data from a different distribution, has shown promising value in knowledge discovery yet still been a challenging problem. Most previous works designed adaptive classifiers by exploring two learning strategies independently: distribution adaptation and label propagation. In this paper, we propose a novel transfer learning framework, referred to as Adaptation Regularization based Transfer Learning (ARTL), to model them in a unified way based on the structural risk minimization principle and the regularization theory. Specifically, ARTL learns the adaptive classifier by simultaneously optimizing the structural risk functional, the joint distribution matching between domains, and the manifold consistency underlying marginal distribution. Based on the framework, we propose two novel methods using Regularized Least Squares (RLS) and Support Vector Machines (SVMs), respectively, and use the Representer theorem in reproducing kernel Hilbert space to derive corresponding solutions. Comprehensive experiments verify that ARTL can significantly outperform state-of-the-art learning methods on several public text and image datasets.

Short Title Adaptation Regularization

Date Added 19.9.2018, 16:59:53

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Tags:

Feature extraction, Kernel, Database Management, pattern classification, support vector machines, Classifier design and evaluation, Computing Methodologies, Design Methodology, Pattern Recognition, SVM, least squares approximations, learning (artificial intelligence), Standards, minimisation, adaptation regularization, adaptation regularization based transfer learning, adaptive classifier, Artificial Intelligence, ARTL, Database Applications, distribution adaptation, generalization error, Hilbert spaces, Information Technology and Systems, joint distribution matching, Joints, kernel Hilbert space, Knowledge acquisition, label propagation, labeled data, Learning, manifold regularization, Manifolds, Mining methods and algorithms, Modeling structured, Probability distribution, regularization theory, regularized least square, representer theorem, Risk management, RLS, structural risk functional, structural risk minimization principle, target classifier, textual and multimedia data, Transfer learning

Attachments

- IEEE Xplore Abstract Record

Beyond Shared Hierarchies: Deep Multitask Learning through Soft Layer Ordering

Type Journal Article
Author Elliot Meyerson
Author Risto Miikkulainen
URL <https://openreview.net/forum?id=BkXmYfbAZ>
Date 2018/02/15
Accessed 20.9.2018, 11:23:02
Library Catalog openreview.net
Abstract Existing deep multitask learning (MTL) approaches align layers shared between tasks in a parallel ordering. Such an organization significantly constricts the types of shared structure that can be...
Short Title Beyond Shared Hierarchies
Date Added 20.9.2018, 11:23:02
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Attachments

- Full Text PDF
- Snapshot

Calibrated Multi-Task Learning

Type Web Page
URL <http://www.kdd.org/kdd2018/accepted-papers/view/calibrated-multi-task-learning>
Accessed 20.9.2018, 11:24:46
Language en
Website Title SIGKDD - KDD 2018
Date Added 20.9.2018, 11:24:46
Modified 20.9.2018, 11:24:46

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Deep Learning for Emotion Recognition on Small Datasets Using Transfer Learning

Type Conference Paper
Author Hong-Wei Ng
Author Viet Dung Nguyen
Author Vassilios Vonikakis

Author Stefan Winkler
URL <http://doi.acm.org/10.1145/2818346.2830593>
Series ICMI '15
Place New York, NY, USA
Publisher ACM
Pages 443–449
ISBN 978-1-4503-3912-4
Date 2015
DOI 10.1145/2818346.2830593
Accessed 19.9.2018, 17:02:58
Library Catalog ACM Digital Library
Abstract This paper presents the techniques employed in our team's submissions to the 2015 Emotion Recognition in the Wild contest, for the sub-challenge of Static Facial Expression Recognition in the Wild. The objective of this sub-challenge is to classify the emotions expressed by the primary human subject in static images extracted from movies. We follow a transfer learning approach for deep Convolutional Neural Network (CNN) architectures. Starting from a network pre-trained on the generic ImageNet dataset, we perform supervised fine-tuning on the network in a two-stage process, first on datasets relevant to facial expressions, followed by the contest's dataset. Experimental results show that this cascading fine-tuning approach achieves better results, compared to a single stage fine-tuning with the combined datasets. Our best submission exhibited an overall accuracy of 48.5% in the validation set and 55.6% in the test set, which compares favorably to the respective 35.96% and 39.13% of the challenge baseline.
Proceedings Title Proceedings of the 2015 ACM on International Conference on Multimodal Interaction
Date Added 19.9.2018, 17:02:58
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Tags:

deep learning networks, emotion classification, facial expression analysis

Attachments

- ACM Full Text PDF

Deep Learning of Representations for Unsupervised and Transfer Learning

Type Conference Paper
Author Yoshua Bengio

URL <http://proceedings.mlr.press/v27/bengio12a.html>
Pages 17-36
Date 2012/06/27
Accessed 19.9.2018, 16:58:32
Library Catalog proceedings.mlr.press
Conference Name Proceedings of ICML Workshop on Unsupervised and Transfer Learning
Language en
Abstract Deep learning algorithms seek to exploit the unknown structure in the input distribution in order to discover good representations, often at multiple levels, with higher-level learned features defi...
Proceedings Title Proceedings of ICML Workshop on Unsupervised and Transfer Learning
Date Added 19.9.2018, 16:58:31
Modified 19.9.2018, 16:58:31

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- Full Text PDF
- Snapshot

Deep Transfer Learning with Joint Adaptation Networks

Type Conference Paper
Author Mingsheng Long
Author Han Zhu
Author Jianmin Wang
Author Michael I. Jordan
URL <http://proceedings.mlr.press/v70/long17a.html>
Pages 2208-2217
Date 2017/07/17
Accessed 19.9.2018, 16:57:56
Library Catalog proceedings.mlr.press
Conference Name International Conference on Machine Learning
Language en
Abstract Deep networks have been successfully applied to learn transferable features for adapting models from a source domain to a different target domain. In this paper, we present joint adaptation network...
Proceedings Title International Conference on Machine Learning
Date Added 19.9.2018, 16:57:56
Modified 19.9.2018, 16:57:56

Attachments

- Full Text PDF
- Snapshot

Deep Transfer Metric Learning

Type Conference Paper
Author Junlin Hu
Author Jiwen Lu
Author Yap-Peng Tan
URL https://www.cv-foundation.org/openaccess/content_cvpr_2015/html/Hu_Deep_Transfer_Metric_2015_CVPR_paper.html
Pages 325-333
Date 2015
Accessed 19.9.2018, 17:00:34
Library Catalog www.cv-foundation.org
Conference Name Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition
Date Added 19.9.2018, 17:00:34
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Improving Deep Reinforcement Learning with Knowledge Transfer

Type Conference Paper
Author Ruben Glatt
Author Anna Helena Reali Costa
URL <https://aaai.org/ocs/index.php/AAAI/AAAI17/paper/view/14787>
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Date 2017/02/12

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Library Catalog aaii.org

Conference Name Thirty-First AAAI Conference on Artificial Intelligence

Language en

Abstract Recent successes in applying Deep Learning techniques on Reinforcement Learning algorithms have led to a wave of breakthrough developments in agent theory and established the field of Deep Reinforcement Learning (DRL). While DRL has shown great results for single task learning, the multi-task case is still underrepresented in the available literature. This

D.Sc. research proposal aims at extending DRL to the multi- task case by leveraging the power of Transfer Learning algorithms to improve the training time and results for multi-task learning. Our focus lies on defining a novel framework for scalable DRL agents that detects similarities between tasks and balances various TL techniques, like parameter initialization, policy or skill transfer.

Proceedings Title Thirty-First AAAI Conference on Artificial Intelligence

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- Snapshot

Joint Face Detection and Alignment Using Multitask Cascaded Convolutional Networks

Type Journal Article

Author K. Zhang

Author Z. Zhang

Author Z. Li

Author Y. Qiao

Volume 23

Issue 10

Pages 1499-1503

Publication IEEE Signal Processing Letters

ISSN 1070-9908

Date October 2016

DOI 10.1109/LSP.2016.2603342

Library Catalog IEEE Xplore

Abstract Face detection and alignment in unconstrained environment are challenging due to various poses, illuminations, and occlusions. Recent studies show that deep learning approaches can achieve impressive performance on these two tasks. In this letter, we propose a deep cascaded multitask framework that exploits the inherent correlation between detection and alignment to boost up their performance. In particular, our framework leverages a cascaded architecture with three stages of carefully designed deep convolutional networks to predict face and landmark location in a coarse-to-fine manner. In addition, we propose a new online hard sample mining strategy that further improves the performance in practice. Our method achieves superior accuracy over the state-of-the-art techniques on the challenging face detection dataset and benchmark and WIDER FACE benchmarks for face detection, and annotated facial landmarks in the wild

benchmark for face alignment, while keeps real-time performance.

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Tags:

Training, data mining, Benchmark testing, learning (artificial intelligence), Detectors, Computer architecture, Face, Face detection, Convolution, annotated facial landmark, Cascaded convolutional neural network (CNN), coarse-to-fine manner, deep cascaded multitask framework, deep learning approach, detection benchmark, detection dataset, face alignment, face detection, face location prediction, face recognition, joint face detection and alignment, landmark location prediction, multitask cascaded convolutional network, online hard sample mining strategy, state-of-the-art technique, unconstrained environment, WIDER FACE benchmark

Attachments

- o IEEE Xplore Abstract Record

Learning Adversarially Fair and Transferable Representations

Type Conference Paper

Author David Madras

Author Elliot Creager

Author Toniann Pitassi

Author Richard Zemel

URL <http://proceedings.mlr.press/v80/madras18a.html>

Pages 3384-3393

Date 2018/07/03

Accessed 20.9.2018, 11:27:19

Library Catalog proceedings.mlr.press

Conference Name International Conference on Machine Learning

Language en

Abstract In this paper, we advocate for representation learning as the key to mitigating unfair prediction outcomes downstream. Motivated by a scenario where learned representations are used by third parties...

Proceedings Title International Conference on Machine Learning

Date Added 20.9.2018, 11:27:19

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Attachments

- Full Text PDF
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Learning General Purpose Distributed Sentence Representations via Large Scale Multi-task Learning

Type Journal Article
Author Sandeep Subramanian
Author Adam Trischler
Author Yoshua Bengio
Author Christopher J. Pal
URL <https://openreview.net/forum?id=B18WgG-CZ>
Date 2018/02/15
Accessed 20.9.2018, 11:23:14
Library Catalog openreview.net
Abstract A lot of the recent success in natural language processing (NLP) has been driven by distributed vector representations of words trained on large amounts of text in an unsupervised manner. These...
Date Added 20.9.2018, 11:23:14
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Attachments

- Full Text PDF
- Snapshot

Learning to Multi-Task by Active Sampling

Type Journal Article
Author Sahil Sharma*
Author Ashutosh Kumar Jha*
Author Parikshit S. Hegde
Author Balaraman Ravindran
URL <https://openreview.net/forum?id=B1nZ1weCZ>
Date 2018/02/15
Accessed 20.9.2018, 11:23:41
Library Catalog openreview.net
Abstract One of the long-standing challenges in Artificial Intelligence for learning goal-directed behavior is to build a single agent which can solve multiple tasks. Recent progress in multi-task learning...

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Modified 20.9.2018, 11:23:41

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- Snapshot

Learning Transferable Features with Deep Adaptation Networks

Type Conference Paper

Author Mingsheng Long

Author Yue Cao

Author Jianmin Wang

Author Michael Jordan

URL <http://proceedings.mlr.press/v37/long15.html>

Pages 97-105

Date 2015/06/01

Accessed 19.9.2018, 16:59:24

Library Catalog proceedings.mlr.press

Conference Name International Conference on Machine Learning

Language en

Abstract Recent studies reveal that a deep neural network can learn transferable features which generalize well to novel tasks for domain adaptation. However, as deep features eventually transition from gen...

Proceedings Title International Conference on Machine Learning

Date Added 19.9.2018, 16:59:24

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- Full Text PDF
- Snapshot

Multi-Task Adversarial Network for Disentangled Feature Learning

Type Conference Paper

Author Yang Liu

Author Zhaowen Wang

Author Hailin Jin

Author Ian Wassell

URL http://openaccess.thecvf.com/content_cvpr_2018/html/Liu_Multi-Task_Adversarial_Network_CVPR_2018_paper.html
Pages 3743-3751
Date 2018
Accessed 20.9.2018, 11:17:22
Library Catalog openaccess.thecvf.com
Conference Name Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition
Date Added 20.9.2018, 11:17:22
Modified 20.9.2018, 11:17:22

Attachments

- Snapshot

Multi-Task Learning by Maximizing Statistical Dependence

Type Conference Paper
Author Youssef A. Mejjati
Author Darren Cosker
Author Kwang In Kim
URL http://openaccess.thecvf.com/content_cvpr_2018/html/Mejjati_Multi-Task_Learning_by_CVPR_2018_paper.html
Pages 3465-3473
Date 2018
Accessed 20.9.2018, 11:20:43
Library Catalog openaccess.thecvf.com
Conference Name Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition
Date Added 20.9.2018, 11:20:43
Modified 20.9.2018, 11:20:43

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- Snapshot

Multi-Task Learning for Document Ranking and Query Suggestion

Type Journal Article
Author Wasi Uddin Ahmad
Author Kai-Wei Chang

Author Hongning Wang

URL <https://openreview.net/forum?id=SJ1nzBeA->

Date 2018/02/15

Accessed 20.9.2018, 11:22:47

Library Catalog openreview.net

Abstract We propose a multi-task learning framework to jointly learn document ranking and query suggestion for web search. It consists of two major components, a document ranker, and a query recommender....

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- Full Text PDF
- Snapshot

Multi-Task Learning Using Uncertainty to Weigh Losses for Scene Geometry and Semantics

Type Conference Paper

Author Alex Kendall

Author Yarin Gal

Author Roberto Cipolla

URL http://openaccess.thecvf.com/content_cvpr_2018/html/Kendall_Multi-Task_Learning_Using_CVPR_2018_paper.html

Pages 7482-7491

Date 2018

Accessed 20.9.2018, 11:21:42

Library Catalog openaccess.thecvf.com

Conference Name Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition

Date Added 20.9.2018, 11:21:42

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- Snapshot

Multi-Task Learning with Neural Networks for Voice Query Understanding on an Entertainment Platform

Type Web Page

URL <http://www.kdd.org/kdd2018/accepted-papers/view/multi-task-learning-with-neural-networks-for-voice-query-understanding-on-a>

Accessed 20.9.2018, 11:25:32

Language en

Website Title SIGKDD - KDD 2018

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Attachments

- Snapshot

One Model To Learn Them All

Type Journal Article

Author Lukasz Kaiser

Author Aidan N. Gomez

Author Noam Shazeer

Author Ashish Vaswani

Author Niki Parmar

Author Llion Jones

Author Jakob Uszkoreit

URL <https://arxiv.org/abs/1706.05137>

Date 2017/06/16

Accessed 20.9.2018, 11:08:37

Library Catalog arxiv.org

Language en

Date Added 20.9.2018, 11:08:37

Modified 20.9.2018, 11:08:37

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Online Multi-Task Learning Using Active Sampling

Type Journal Article

Author Sahil Sharma

Author Balaraman Ravindran

URL <https://openreview.net/forum?id=H1XLbXEtg>
Date 2017/02/17
Accessed 20.9.2018, 11:24:15
Library Catalog openreview.net
Abstract One of the long-standing challenges in Artificial Intelligence for goal-directed behavior is to build a single agent which can solve multiple tasks. Recent progress in multi-task learning for...
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PackNet: Adding Multiple Tasks to a Single Network by Iterative Pruning

Type Conference Paper
Author Arun Mallya
Author Svetlana Lazebnik
URL http://openaccess.thecvf.com/content_cvpr_2018/html/Mallya_PackNet_Adding_Multiple_CVPR_2018_paper.html
Pages 7765-7773
Date 2018
Accessed 20.9.2018, 11:22:02
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Conference Name Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition
Short Title PackNet
Date Added 20.9.2018, 11:22:02
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- Snapshot

Partially Shared Multi-Task Convolutional Neural Network With Local Constraint for Face Attribute Learning

Type Conference Paper
Author Jiajiong Cao

Author Yingming Li
Author Zhongfei Zhang
URL http://openaccess.thecvf.com/content_cvpr_2018/html/Cao_Partially_Shared_Multi-Task_CVPR_2018_paper.html
Pages 4290-4299
Date 2018
Accessed 20.9.2018, 11:21:15
Library Catalog openaccess.thecvf.com
Conference Name Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition
Date Added 20.9.2018, 11:21:15
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- Snapshot

Simultaneous Deep Transfer Across Domains and Tasks

Type Conference Paper
Author Eric Tzeng
Author Judy Hoffman
Author Trevor Darrell
Author Kate Saenko
URL https://www.cv-foundation.org/openaccess/content_iccv_2015/html/Tzeng_Simultaneous_Deep_Transfer_ICCV_2015_paper.html
Pages 4068-4076
Date 2015
Accessed 19.9.2018, 17:05:23
Library Catalog www.cv-foundation.org
Conference Name Proceedings of the IEEE International Conference on Computer Vision
Date Added 19.9.2018, 17:05:23
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