3d Deep Shape Descriptor Cv Foundation

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3d Deep Shape Descriptor Cv

Shape descriptor is a concise yet informative represen- tation that provides a 3D object with an identification as a member of some category. We have developed a concise deep shape descriptor to address challenging issues from ever-growing 3D datasets in areas as diverse as engineer- ing, medicine, and biology.

3D Deep Shape Descriptor - cv-foundation.org

3D Deep Shape Descriptor Yi Fang1, Jin Xie1, Guoxian Dai1, Meng Wang1, Fan Zhu1, Tiantian Xu2, Edward Wong2, 1Department of Electrical and Computer Engineering, New York University Abu Dhabi 2Polytechnic School of Engineering, New

York University Shape descriptor refers to an informative description that provides a 3D ob-ject with an identification as a member of some category.

3D Deep Shape Descriptor - cv-foundation.org

DeepShape: Deep Learned Shape Descriptor for 3D Shape Matching and Retrieval Jin Xie y, Yi Fang , Fan Zhu , and Edward Wongz yDepartment of Electrical and Computer Engineering, New York University Abu Dhabi zPolytechnic School of Engineering, New York University fjin.xie, yfang, fan.zhu, ewongg@nyu.edu Abstract Complex geometric structural variations of 3D model

DeepShape: Deep Learned Shape Descriptor for 3D Shape ...

Shape descriptor is a concise yet informative representation that provides a 3D object with an identification as a member of some category. This paper developed a concise deep shape descriptor for the first time to address challenging issues from ever-growing 3D datasets in areas as diverse as engineering, medicine, and biology.

CVPR 2015 Open Access Repository - cv-foundation.org

Deepshape: Deep learned shape descriptor for 3D shape matching and retrieval Abstract: Complex geometric structural variations of 3D model usually pose great challenges in 3D shape matching and retrieval. In this paper, we propose a high-level shape feature learning scheme to extract features that are insensitive to deformations via a novel ...

Deepshape: Deep learned shape descriptor for 3D shape ...

DeepShape: Deep-Learned Shape Descriptor for 3D Shape Retrieval Jin Xie, Guoxian Dai, Fan Zhu, Edward K.Wong, and Yi Fang Abstract—Complex geometric variations of 3D models usually pose great challenges in 3D shape matching and retrieval. In this paper, we propose a novel 3D shape feature learning method to

DeepShape: Deep-Learned Shape Descriptor for 3D Shape

...
Dense 3D shape correspondence is an important prob- lem in computer vision and computer graphics. Recently, the local shape descriptor based 3D shape correspondence approacheshavebeenwidelystudied,wherethelocalshape descriptor is a real-valued vector to characterize the geo-metrical structure of the shape.

Learned Binary Spectral Shape Descriptor for 3D Shape ...
Recently researchers have been shifting their focus towards learned 3D shape descriptors from hand-craft ones to better address challenging issues of the deformation and structural variation inherently present in 3D objects. 3D geometric data are often transformed to 3D Voxel grids with regular format in order to be better fed to a deep neural net architecture.

3D-A-Nets: 3D Deep Dense Descriptor for Volumetric Shapes ...
3D shape is a crucial but heavily underutilized cue in today's computer vision systems, mostly due to the lack of a good generic shape representation. With the recent availability of inexpensive 2.5D depth sensors (e.g. Microsoft Kinect), it is becoming increasingly important to have a powerful 3D shape representation in the loop. Apart from category recognition, recovering full 3D shapes from ...

3D ShapeNets: A Deep Representation for Volumetric Shapes
#include <opencv2/imgproc.hpp> computes the connected components labeled image of boolean image and also produces a statistics output for each label . image with 4 or 8 way connectivity - returns N, the total number of labels [0, N-1] where 0 represents the background label. ltype specifies the output label image type, an important consideration based on the total number of labels or ...

OpenCV: Structural Analysis and Shape Descriptors
This paper proposes a 3D shape descriptor network, which is a deep convolutional energy-based model, for modeling volumetric

shape patterns. The maximum likelihood training of the model follows an "analysis by synthesis" scheme and can be interpreted as a mode seeking and mode shifting process.

Learning Descriptor Networks for 3D Shape Synthesis and ...

This paper proposes a 3D shape descriptor network, which is a deep convolutional energy-based model, for modeling volumetric shape patterns. The maximum like- lihood training of the model follows an "analysis by synthe- sis" scheme and can be interpreted as a mode seeking and mode shifting process.

Learning Descriptor Networks for 3D Shape Synthesis and ...

Abstract: 3D objects play a vital role in computer games, movies, TV, engineering design, and biological sciences. Researchers have studied 3D object retrieval techniques using 2D and 3D shape descriptors in the last several decades. In this paper, some of the most popular shape descriptors are reviewed.

A Survey of 2D and 3D Shape Descriptors - IEEE Conference ...

ing of 3D shapes. A new deep learning approach for extracting material-aware local descriptors of surface points of untextured 3D shapes, along with a symmetry-aware CRF to make material predictions more coherent. Prototype material-aware applications that use our de-scriptors for automatic texturing, part retrieval, and physical simulation. 2.

Learning Material-Aware Local Descriptors for 3D Shapes

Finding point-wise correspondences between images is a long-standing problem in computer vision. Corresponding sketch images is particularly challenging due to the varying nature of human style, projection distortions and viewport changes. In this paper we present a feature descriptor targeting line drawings learned from a 3D shape data set. Our descriptors are designed to locally match image ...

[1912.05019] SketchZooms: Deep multi-view descriptors for ...

Establishing correspondences between 3D shapes is a fundamental task in 3D Computer Vision, typically ad-dressed by matching local descriptors. Recently, a few at-tempts at applying the deep learning paradigm to the task have shown promising results. Yet, the only explored way to learn rotation invariant descriptors has been to feed neural

Learning an Effective Equivariant 3D Descriptor Without ...

A hybrid shape descriptor is proposed as a representation of objects for recognition. We first extracted five 2D shape features from contour-based images and five 3D shape features over point cloud data to capture the global and local shape characteristics of an object.

An Effective 3D Shape Descriptor for Object Recognition ...

Meng Wang and Yi Fang*, "Local diffusion map signature for symmetry-aware non-rigid shape correspondence", ACM Multimedia 2016 (ACMMM), 2016. Jin Xie, Guoxian Dai, Fan Zhu, Edward Wong and Yi Fang*, "DeepShape: Deep-Learned Shape Descriptor for 3D Shape Retrieval", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2016

Yi Fang | NYU Tandon School of Engineering

ECCV 2020 spotlight presentation. Publication: DH3D: Deep Hierarchical 3D Descriptors for Robust Large-Scale 6DoF Relocalization, ECCV 2020 (spotlight) Authors: Juan Du, Rui Wang, Daniel Cremers ...

[ECCV Spotlight] DH3D: Deep Hierarchical 3D Descriptors for Robust Large-Scale 6DoF Relocalization

In this paper, we propose a novel method named GP-Aligner to deal with the problem of non-rigid groupwise point set registration. Compared to previous non-learning approaches, our proposed method gains competitive advantages by leveraging the power of deep neural networks to effectively and efficiently learn to align a large number of highly deformed 3D shapes with superior performance. Unlike ...