**TOPIC: image registration using convolution neural network**

**Deformable image registration using convolutional neural networks**

**REVIEW:**

Registration of deformed images can need a lot of time and usually require extensive to preform parameterization on Particular application. application include 2D and 3D image Direct transformation of network and convolution occurs between two pair of three dimensional images. Two or more maps are produced by the network for a, b and z components of a spline thin-plate grid of transformation. The network is in random transformation, they are used with a short collection of images for the preferred application. same manner, Training does not involve manually data with annotation. data sets of collection are used to demonstrate CT image pairs of inspiration which include related landmark that are annotated the quality of the registration. Quick registration times are one advantage of this approach as well as its simplest parameterization.

**Reference:**

M. W., Moeskops, P, Veta, M., & Pluim J. P. W. (2018). Deformable image registration using convolutional neural networks. In Medical Imaging 2018 Image Processing

**A Novel Region-Based Image Registration Method for Multisource Remote Sensing Images Via CNN**

**REVIEW**:

Utilising of image in their entirety using a variety of satellite sensors can dramatically improve performance remote-sensing software thus, attracted large focus on research One of the most significant obstacles that research encounters are generated by multisource image registration The suggested technique makes use of the input images region features. can deliver multisource data with more standardised and shared information. A pixel-level output that matches the input images is the registration process's end result. The proposed registration mechanism gets beyond some of the drawbacks of conventional feature extraction techniques. ( example: point feature) used in earlier registration strategies The results show that the suggested technique performs well for multisource remote sensing image registration and can provide as a foundation for the merging of several sources of images.

**Reference:**

L. Zeng, Y. Du, H. Lin, J. Wang, J. Yin and J. Yang, "A Novel Region-Based Image Registration Method for Multisource Remote Sensing Images Via CNN," in IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 14, pp. 1821-1831, 2021, doi: 10.1109/JSTARS.2020.3047656.

**Convolutional Neural Network Implementation for Image Classification using CIFAR-10 Dataset**

**REVIEW:**

Traditional neural networks are characterised by feature extraction, even though they are capable of image classification. A length procedure that results in inadequate generalisation of test data The classification of CIFAR-10 data collection using a convolutional neural network (CNN) is demonstrated in this research. This approach can improve fast without relying on feature extraction, according to previous studies. filters and pooling layers were employed to extract under lying image information. preventing overfitting and increase accuracy during validation and Convolutional method testing, dropout, regularisation, and variation were utilised. This deeper network produced low overfitting and high Test accuracy.

**Reference:**

TY : BOOK

AU - :Ajala Sunday

PY : 2021/11/06

T1 : Convolutional Neural Network Implementation for Image Classification using CIFAR-10 Dataset

DO :10.13140/RG.2.2.27690.54724

**Image Classification using Convolutional Neural Networks**

**REVIEW:**

The most difficult task in the field of computer vision in recent years has been automatic classification of images due to the quick progress in the recognition of digital contents. Comparatively speaking to human eyesight, automatic image understanding and analysis by a system is most difficult task . Numerous studies have been conducted to address issues with the current classification system. however, the result was limited to low level image primitives. In this study, our system employs deep learning to produce the outcomes in the field of computer visions. Convolutional neural networks (CNN) are presented by our system. Automatic image classification is being done using a machine learning algorithm. Our algorithm classifies image using the Digit o data set as a benchmark. It demonstrates that our model gets excellent accuracy in image classification.

**Reference :**

TY - BOOK

AU - Ramprasath, Muthukrishnan

AU - Shanmugasundaram, Hariharan

AU - Prasath, Ram

PY - 2022/01/20

SP -

T1 - Image Classification using Convolutional Neural Networks

ER -

**Classification of Image using Convolutional Neural Network (CNN)**

**REVIEW:**

In computer vision, the automatic detection and extraction of a single image or a series of photographs can provide useful information. Convolutional Neural Networks (CNN) have been utilised in image classification systems. The features from the top layer of the CNN are typically used for classification; such features could not include enough valuable information to accurately anticipate a picture. In some circumstances, lower-layer characteristics have greater discriminative strength than higher-layer features. it appears that using features from a particular layer exclusively for classification is a method that does not fully exploit the potential discriminant power of Convolutional Neural Network This trait necessitates the integration of features from many layers. We want to build a model with several layers that can identify and categorise the photographs. Utilising the data base management and concepts from convolutional neural networks, we aim to construct our model

**Reference:**

TY - JOUR

AU - Hossain, Md. Anwar

AU - Sajib, Md

PY - 2019/05/18

SP - 13

EP - 18

T1 - Classification of Image using Convolutional Neural Network (CNN)

VL - 19

DO - 10.34257/GJCSTDVOL19IS2PG13

JO - Global Journal of Computer Science and Technology

ER -

**3D Convolutional Neural Networks Image Registration**

**REVIEW:**

In this method for image registration utilising of displacement vector fields many more methods are included there are two types of learning supervised and unsupervised network configurations to evaluate Due to displacement vector fields, training may be conducted intensively and under full supervised. In order to more predict bigger displacements of the envisaged networks, which will expand their 3D image into multi Imaging design capturing image range as much as possible, the designs that are included Supervised Learning from Artificial Deformation into a multi-stage design. Utilising more amount of database management of image data, the suggested to evaluated

**REFERENCE:**

**Publication:** eprint arXiv:2105.01844

**Pub Date:** May 2021

**Bibcode:** 2021arXiv210501844E

**Keywords:** Electrical Engineering and Systems Science - Image and Video Processing;

**Image Text Deblurring by Convolutional Neural Networks**

**Review:**

In this modern autoencoder architecture for deblurring of texts using convolution neural networks. This program main goal is to achieve image deblurring of the blur kernel. using this technique, which turns a fuzzy image into a sharp one. Deblurring documents using convolutional neural networks Finding a sharp image just requires the use of a blurred image as input. blur kernel expertise is not required as a result. The structural similarity index (SSIM) and peak signal to noise ratio (PSNR) are used to evaluate the anticipated image in this step. The outcomes show a considerable improvement in visual quality compared to utilising a data collection of text pictures.

Reference:

Ali Shakir Alahmed, Serkan Ozbay; Image text deblurring by convolutional neural networks. AIP Conference Proceedings 31 March 2023; 2475 (1): 070009.

**Efficient Neural Vision Systems Based on Convolutional Image Acquisition**

Author: Pedram Pad, Simon Narduzzi, Clement K ´ undig, ¨ Engin Turetken, Siavash A. Bigdeli, L. Andrea Dunbar

Review:

Deep learning has made more impact, but cutting-edge methods require a lot of computing. Their employment in real-time applications on low power and other resource-limited systems is constrained by the trade-off occurs between accuracy and computing time and energy. Using an engineering to the point spread function (PSF) of an optical imaging system, we suggest this fundamental difficulty in this paper by developing a hybrid optical-digital implementation of a convolutional neural network . To do this, a pre-trained CNN's first layer's massive convolution kernel is duplicated in the PSF of an image aperture It consumes no energy and has no latency regardless of the size and shape of the kernel. resulted from experiments on two data collection reflect our method resulted in a more than two more orders of magnitude reduction in the computational cost by obtaining precision that is comparable to the state-of-the-art, or superior accuracy at a same as computational price.

Advancements in Image Classification using Convolutional Neural Network

Author: Farhana Sultana, Abu Sufian, Paramartha Dutta

**Review:**

The most common method for classifying images is the convolutional neural network (CNN).pixel by pixel Here, we have quickly covered a different CNN's components. Image classification done by so many methods as time slicing clipping as we have learned in signal processing We have discussed many CNN architectures for image categorization in this model .We have demonstrated improvements in CNN through this research CNN have growing so high that all computing or some what of operation are preformed through convolution, from LeNet-5 to the most recent SENet model. Each model's description and training specifics have been covered.

**CONVOLUTIONAL NEURAL NETWORKS FOR MEDICAL IMAGE SEGMENTATION**

Author:

**Review:**

Here, with a focus on medical image segmentation, we come across several fundamental properties and operation of convolutional neural networks (CNNs). We discuss about CNN architecture, emphasising the voxel-wise categorization, the receptive field, and the spatial origin of the data. The interplay between voxel-wise classification, patch size, and the receptive organized field is highlighted as discuss about sampling input-output pairs. We conclude by offering a medical knowledge historical overview on of significant updates to CNN architectures for classification and segmentation, providing insights into the relationships between two important CNN architectures. U-Net RegNet