Silver Touch TECHNOLOGIES

COMPUTER VISION AND OPENCV

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COMPUTER VISION

- Started with the thought of creating software programs that would “describe what it saw”
- How computers see and understand digital images and videos
- Computer vision spans all tasks performed by biological vision systems, including "seeing" or sensing a visual stimulus, understanding what is being seen, and extracting complex information into a form that can be used in other processes.
- Constructing 3D image from a set of 2D images

UNDERWATER COMPUTER VISION

- Applications include Inspection of underwater structures for the offshore industry to the identification and counting of fishes for biological research.
- Underwater vehicles are constantly moving due to currents and other phenomena

COMPUTER VISION APPLICATIONS

- Retail and Retail Security
- Automotive
- Healthcare
- Agriculture
- Banking
- Industrial

COMPUTER VISION APPLICATIONS

- Retail and Retail Security


STOPLIFT
CHECKOUT VISION SYSTEMS

COMPUTER VISION APPLICATIONS

- Banking


TEST
Dont take picture from the side

COMPUTER VISION APPLICATIONS

- Agriculture


SLANTRANGE
IMPROVING AGRICULTURE FROM ABOVE
Navigating SlantView

DEEP LEARNING AND COMPUTER VISION

- Deep Learning Overview
- Deep Learning models as feature detectors
- Generative Networks

DEEP LEARNING AND COMPUTER VISION

- Image Classification and Annotation
- Object Recognition and Image Search
- Object Detection
- Object Tracking
- Human Action Recognition
- Image Stylization, editing and new image generation

RESEARCH IN DEEP LEARNING

- Capsule Networks
- Spherical CNN
- Group Normalization
- Generative Adversarial Networks

IMAGE

- A set of pixels.
- A set of array.
- A static visual representation of an object.
- Image holds no meaning until you associate knowlege with it.

OPENCV

- OpenCV (Open Source Computer Vision Library) is an open source computer vision and machine learning software library.
- The library has more than 2500 optimized algorithms.

OPENCV

- Contains algorithms that can be used to detect and recognize faces, identify objects, classify human actions in videos, track camera movements, track moving objects, extract 3D models of objects, produce 3D point clouds from stereo cameras, stitch images together to produce a high resolution image of an entire scene, find similar images from an image database, remove red eyes from images taken using flash, follow eye movements, recognize scenery and establish markers to overlay it with augmented reality, etc.

CODING

- Reading Images using OpenCV Library
- Save Image in different format.

CODING

- Applying different shapes to an image

CODING

- Image Processing
  1. Transformation
  2. Rotation
  3. Thresholding

CODING

- Image Filtering
  1. Gaussian Filter
  2. Median Blur Filter

CODING

- Canny Feature Detection

CODING

Video Analysis

CODING

Capture Video from a File or a stream

CODING

Save Video to a file

CODING

Real Time Face Detection from WebCam

THANK YOU!

https://roshantanisha.github.io/