CMPE 256

Ring Door Bell Assignment

The steps of data mining architecture for the feature of detecting familiar faces and logo are,

1. **Data Collection:**

* Collect images of individuals, User-provided photos of known individuals.
* Images of packages with various logos and from delivery services with different branding.

1. **Data Preprocessing:**

* Use face detection algorithms and perform feature extraction on the images to get relevant data.
* Apply to image processing to identify logos and do feature extraction on the images to extract relevant data.

1. **Data Transformation:**

* Convert face images into numerical feature vectors using models like FaceNet or OpenFace.
* Use CNNs to generate feature vectors for logo images or apply object detection algorithms to classify logos.

1. **Data Mining:**

* Training a classification model (e.g., SVM, kNN, or a deep learning-based classifier) using face embeddings and known individual labels.
* Training an object detection model to recognize and classify logos within images.

1. **Model Evaluation:**

* Test the model with a set of images that is new to the model and test its ability and according to that the model can be improved.
* Evaluate performance with real package images and assess accuracy.

These steps can be performed recursively until the desire results are not generated.

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