KNN Face Recognition

Friday, 7 January 2022 8:02 PM

Training KNN → O(1)

Evaluation → O(m.n)

100M

low-latency

5ms
10ms

lazy learner

User (1M)

actual read

robot

{log-reg} $\sigma(\theta^T x)$

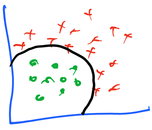
$\sigma(\theta_0 + \theta_1 x_1 + \theta_2 x_2 \ldots \theta_n x_n) \rightarrow O(n)$

$n \approx 10,100,1000$

① Offline

↳ 1m, 3min

② KNN → Non-Linear



KNN is Preferred

KNN Search

↳ Recommender System

Amazon Products

2000

KNN

Apple Friends Pass

KNN

↳ Document Similarity

1000 documents

K-NN

{ } politics modi

OpenCV, Face Detection

Automed Attendance System

20 stud

Dataset

20 Malay

20 Yajnit

20 Akshit

ML

id

roll no.

Photo

-SWE-

.csv

.jpg

.txt

opencv → webcam / Videos

Data Collection

20 frames → mohit } categories

20 frames → mohit

numpy array

array shape → (20, 100, 100, 3)

RGB → GRAY

no. of imgs

100×100×3

(20, 100, 100, 3)

② face recog

10000

25

61

mohit.npy → (25, 10000)

amit.npy → (61, 10000)

X → (86, 10000)

y → (86, 1)

m n

X → (86, 10000)

y → (86, 1)

{ 0 : mohit
1 : amit } 100

100

= KNN.fit(X, y)

knn.predict(query data)

0 1

for ---

resize → (100, 100)

(1, 10000)

query data

reshape

100

100

1

n

(m, n)