

```

SetDirectory[DirectoryName[SystemDialogInput["FileOpen"]]]

dir = InputString[]

dir = "E:\\Picture\\新建文件夹\\新建文件夹\\Temp\\暂时不用修改的\\thumbnails";

SetDirectory[dir]

```

## 从缩略图中查找

```

pics = FileNames["*.jpg"];

thumbnails = Import/@pics[[11 ;; 30]];

nb = CreateDocument[
  Button[#, pic = Extract[pics, Flatten@Position[thumbnails, #]]] & /@ thumbnails]

NotebookClose[nb]

```

## 创建8\*8的尺寸并至64级灰度图

```

pics = FileNames["*.jpg"];

thumbnails = Thumbnail[Import[#]] & /@ pics;

thumbnailsdir = CreateDirectory@FileNameJoin[{Directory[], "thumbnails"}]
thumbnailsFiles =
  Table[Export[FileNameJoin[{thumbnailsdir, "thumbnails" <> "_" <> pics[[i]]}],
    ImageResize[Import[pics[[i]]], {8, 8}], {i, Length[pics]}];

matrix88List =
  ParallelTable[imgMatrix = ImageData[ImageResize[Import[pics[[i]]], {8, 8}]];
  mean = Mean@Flatten@ (matrix = Table[Total@imgMatrix[[i, j]], {i, 8}, {j, 8}]);
  matrixToCompare = Table[If[# > mean, 1, 0] & @matrix[[i, j]], {i, 8}, {j, 8}],
  {i, Length[pics]}];

Export["matrix88list.txt", matrix88List]

```

## 相似特征量设定,pHash

如文件大小，分辨率，不同的哈希值等

```

fileFhashH = Import[
  "E:\\Picture\\新建文件夹\\新建文件夹\\Temp\\暂时不用修改的\\thumbnails\\hashList2012-1-29.txt", "List"];

Select[matrix88List, NumberQ[Total@Flatten[#]] &]

fileFhashH = Table[
  StringJoin[ToString /@ Flatten[matrix88List[[i]]], {i, Length[matrix88List]}];

pHash = ImageResize[pics, 1]

```

```

Dynamic[{imgMatrix = ImageData[ImageResize[Import[pic], {8, 8}]];
  mean = Mean@Flatten@(matrix = Table[Total@imgMatrix[[i, j]], {i, 8}, {j, 8}]);
  matrixToCompare = Table[If[# > mean, 1, 0] &@matrix[[i, j]], {i, 8}, {j, 8}];
  matrixToCompareString = StringJoin[ToString /@ (Flatten@matrixToCompare)]]]

Dynamic[
pos = Position[fileFhashH, #] & /@
  Nearest[fileFhashH, matrixToCompareString, 20] // Flatten // Union;
(*显示与此图片大小最接近的n张图片*)
Import /@ (Extract[pics, List /@ pos])]

pos[{{6, 8}}]

(Extract[pics, List /@ pos[{{6, 8}}]])

FileHash /@ %

Dynamic[pos = Position[fileFhashH, #] & /@
  Nearest[fileFhashH, matrixToCompare, 20] // Flatten // Union]

Nearest[fileFhashH, matrixToCompareString, 10]

matrixGrouped = FindClusters[fileFhashH, DistanceFunction -> HammingDistance]

Import /@ (Extract[pics, List /@ pos])

fileFhashH = Select[Mean /@ keyPointsList, NumberQ[Total@#] &];

```

## 新建立一个算法来表征图片，关键点SURF算法

```

fileFhashH = FileHash /@ pics;

pointsOfSample = ImageKeypoints[Import@pic]

Image[IntegerPart@pointsOfSample / Max@IntegerPart@pointsOfSample]

IntegerPart@pointsOfSample

keyPointsList = ParallelTable[ImageKeypoints[Import@pics[[i]]], {i, Length[pics]};

Dynamic[
pos = Position[fileFhashH, #] & /@
  Nearest[fileFhashH, Mean@ImageKeypoints[Import[pic]], 1] // Flatten // Union;
(*显示与此图片大小最接近的n张图片*)
Import /@ (Extract[pics, List /@ pos])]

```

## 按文件大小查找

```

Dynamic[fileFbyteBcountC = FileByteCount /@ pics;
pos = Position[fileFbyteBcountC, #] & /@
  Nearest[fileFbyteBcountC, FileByteCount[pic], 5] // Flatten // Union;
(*显示与此图片大小最接近的n张图片*)
Import /@ (Extract[pics, List /@ pos])]

```

```

List /@ pos

Extract[pics, List /@ pos]

Position[fileFbyteBcountC, #] & /@ Nearest[fileFbyteBcountC, FileByteCount[pic], 5]

FileByteCount[pic]

Position[fileFbyteBcountC, 3638]

fileFbyteBcountC // Length

fileFbyteBcountC // Union // Length

```

## 重新创建缩略图等

```

pics = FileNames["*.jpg"];

thumbnails = Thumbnail[Import[#]] & /@ pics;

thumbnailsdir = CreateDirectory@FileNameJoin[{Directory[], "thumbnails"}]
thumbnailsFiles =
  Table[Export[FileNameJoin[{thumbnailsdir, "thumbnails" <> "_" <> pics[[i]]}],
    thumbnails[[i]]], {i, Length[pics]}];

FileHash /@ thumbnailsFiles

FileHash /@ pics

目标功能：
  对一张或多张图片，查找其相似的图片，并显示
  简单的一些分组函数有，FileHash

pics

nb = CreateDocument[
  Button[#, pic = Extract[pics, Flatten@Position[thumbnails, #]]] & /@ thumbnails]

NotebookClose[nb]

Dynamic[fileFbyteBcountC = FileByteCount /@ pics;
pos = Flatten@Position[fileFbyteBcountC, #] & /@
  Nearest[fileFbyteBcountC, FileByteCount[pic], 5];
(*显示与此图片大小最接近的n张图片*)
Import /@ (Extract[pics, pos])]

fileFbyteBcountC

Dynamic[
  Import /@ Select[pics, MemberQ[Nearest[fileFbyteBcountC, FileByteCount[pic], 5],
    FileByteCount[#]] &] // TableForm]

```

以下测试不同的FileHash的值产生的不同效果

```
fileFhashH = FileHash /@ pics;  
Dynamic[Import /@ Select[pics,  
    MemberQ[Nearest[fileFhashH, FileHash[pic], 5], FileHash[#]] &] // TableForm]
```