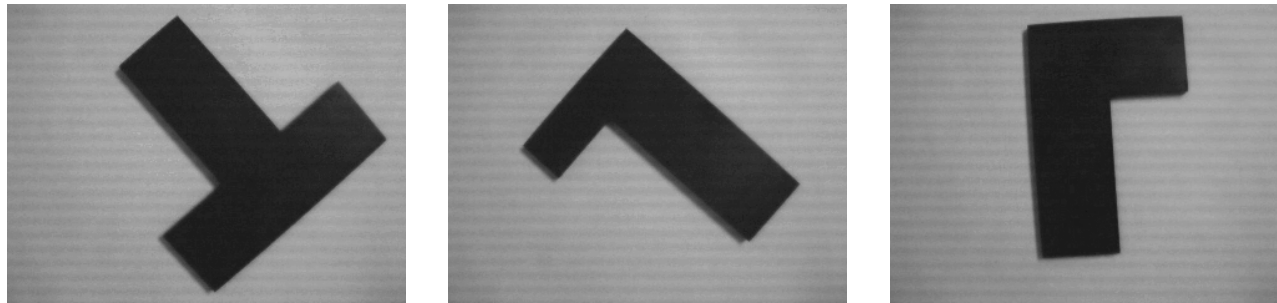# Flat Part Recognition

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Flat Part Recognition

How to recognise these and similar parts

Object Recognition General Overview

Several approaches to classification/recognition. Choose the same class as objects with:

- **Shape** - similar shape descriptors

- **Appearance** - similar pixel values

- **Geometric** - similar structures in similar places with similar parameters

- **Graph** - similar part relationships

- **Bag of Words** - enough similar local feature descriptors

Recognition Assumptions (Here)

- Flat, viewed orthographically

- Always from same distance

- Good contrast everywhere

- No specularities

- Here: shape-based recognition

Slide credit: Bob Fisher

Shape-based recognition algorithm

1. Extract object from image (aka segmentation)

2. Compute properties

3. Use properties to compute class

4. Learning model properties for the classes

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Top level Matlab

```matlab
Dim = 3;              % number of feature properties
modelfile = input('Model file name\n?','s');
eval(['load ',modelfile,' NumCls Means ICor'])
run=1;
while ~(run == 0)
    currentimagergb = liveimagejpg
    currentimage = rgb2gray(currentimagergb);
    vec = extractprops(currentimage);
    class = classify(vec,NumCls,Means,ICor,Dim)
    run = input('Do another image (0,1)\n?');
end
```

Slide credit: Bob Fisher

Lecture Overview

1. Typical shape-based recognition approach

2. A generic matlab implementation

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