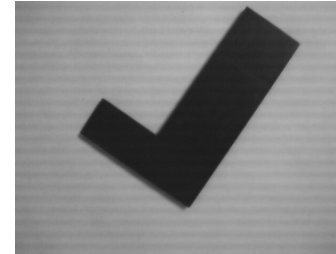


# Flat Rigid Part Recognition

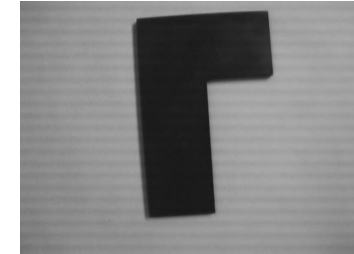
Robert B. Fisher  
School of Informatics  
University of Edinburgh

## Flat Rigid Part Recognition Overview

How to discriminate between and also estimate image positions?



vs



? Model-based Object Recognition

## Overview

Geometric Model-based Rigid Object

? :

Geometric description

Model matching

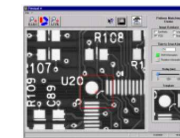
Pose estimation

Match verification

## Motivation - automated visual inspection

Manufacturing

- High speed product  
?
- Largest use of computer vision systems worldwide
- Most western manufacturing has some visual quality control



## Introduction

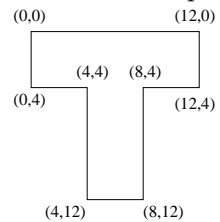
Given:

Isolated binary image object

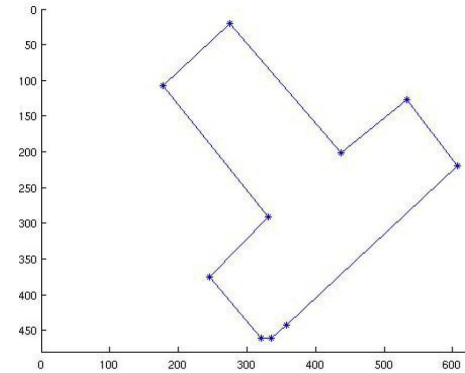


Assume:

1. Geometric shape  for parts to be recognized



2. Image feature positions



Issues - how to:

1.  image and model features?
2. Estimate transformation mapping model onto data?

## Discussion

- Efficient if good property matching tests
- Suitable for 50% (estimated) flat parts
- Similar techniques for shapes other than straight lines: circular arcs, corners, holes, ...
- Extendable to 3D
- Extensions for  projection