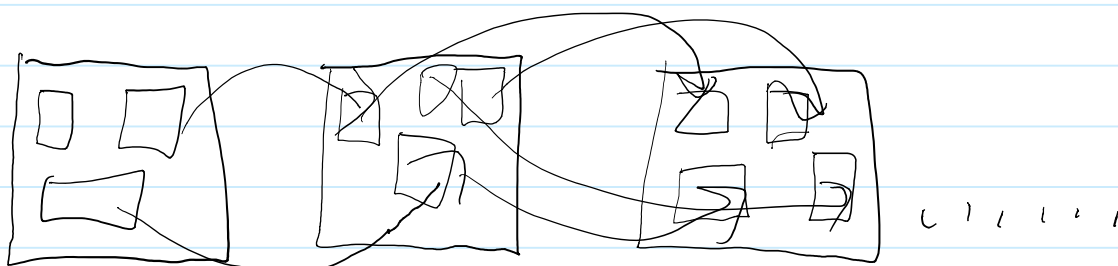# Project 2

Input

- 2 or more images
- Specification of bounding boxes for each image indicating objects of interest

N_1 boxes in frame 1

N_2 boxes in frame 2

Goal: do data association of boxes between the two images.

Harris Corner Detection

Rough Outline of Steps

1.) Compute Harris Corners

2.) Extract feature patches around each corner

use SIFT regis would like ✓

do it however you want

Examples:

a) Intensity patches of size (e.x. 7×7)

49×1 vector

b) color patches

you
want,
but
he demands
that
be atleast
use hints
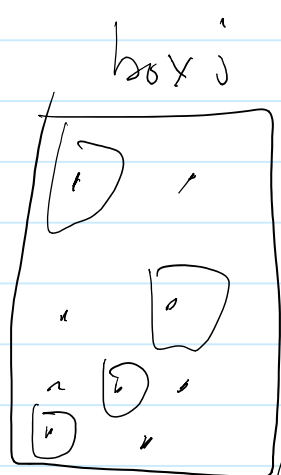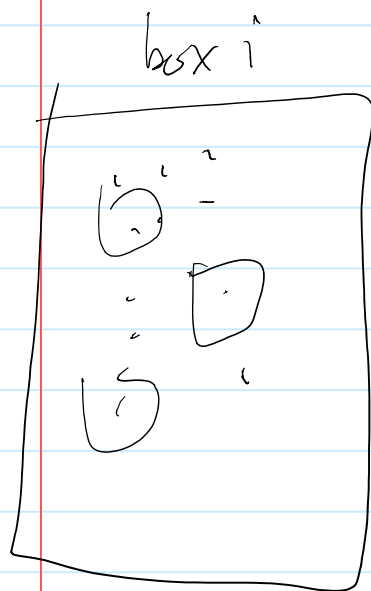corners.

b) Color patches

41 x 1 vector

e.g. 7 × 7 $(4.9 \times 3) \times 1$ vector

3.) Form an $N_1 \times N_2$ affinity array A
where $A(i,j) =$ score saying how well object i
in image 1 matches object
j in image 2.

4.) Use Hungarian Algorithm to match
$$\left[\text{This Code Will Be Provided} \right]$$

Compute Affinity Scores from corner patch matches

box i

box j   1.) determine corners in
box i and box j

2.) for each corner
in box i, A, find the
corner in box j, B,
that matches

he uses this

USE: [SSD]
NCC

NCC

make sure A is the best
match for B and B
is the best match for A

just use this

3.) Accumulate a score which is
# of bidirectional consistant matches

or

3.) do RANSAC on these ～ corner
matches to count how many corner
matches are also consistent with
a translation

Extra Credit
implement
Panorama
?.?.?.

$$x_k' = x_k + T_x$$
$$y_k' = y_k + T_y$$

Score here will be # of corners
that also pass RANSAC

Affinity Matrix

j image 2
objects/boxes

image 1
objects j
boxes

A_{ij}

Due December 7th at Night