

Visual Recognition With Humans in the Loop

- *Mit Shah*

Idea..



Chair? Airplane? ...

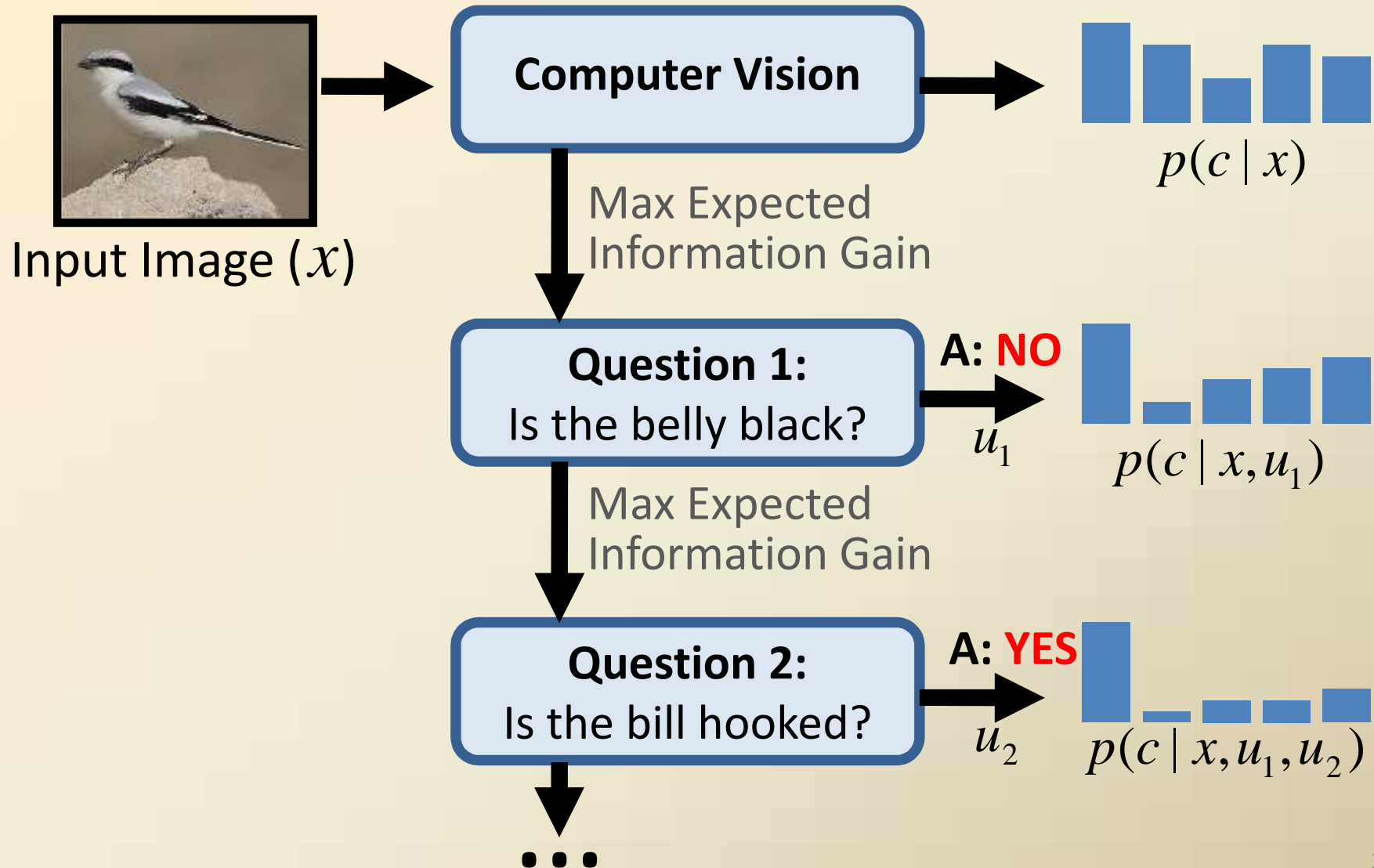


Finch? Bunting?...

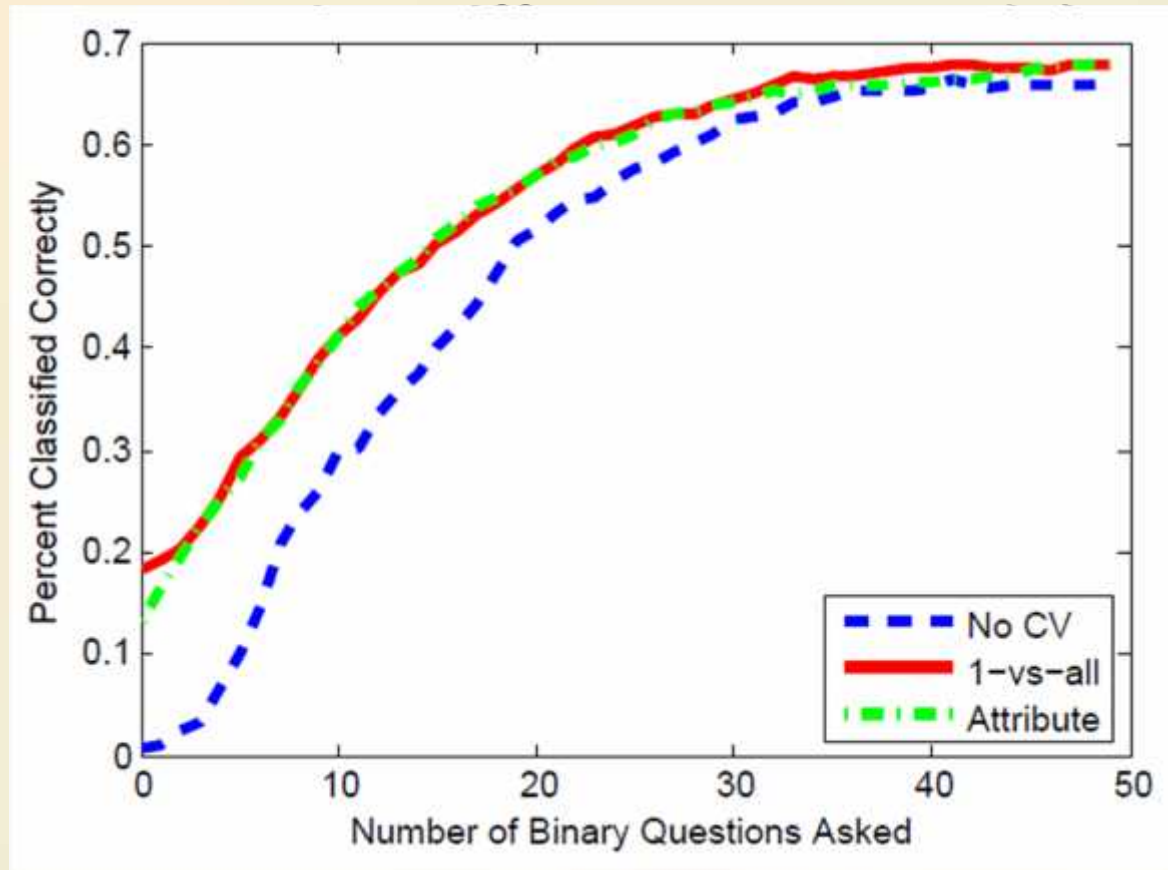


Yellow Belly? Blue Belly? ...

Basic Algorithm



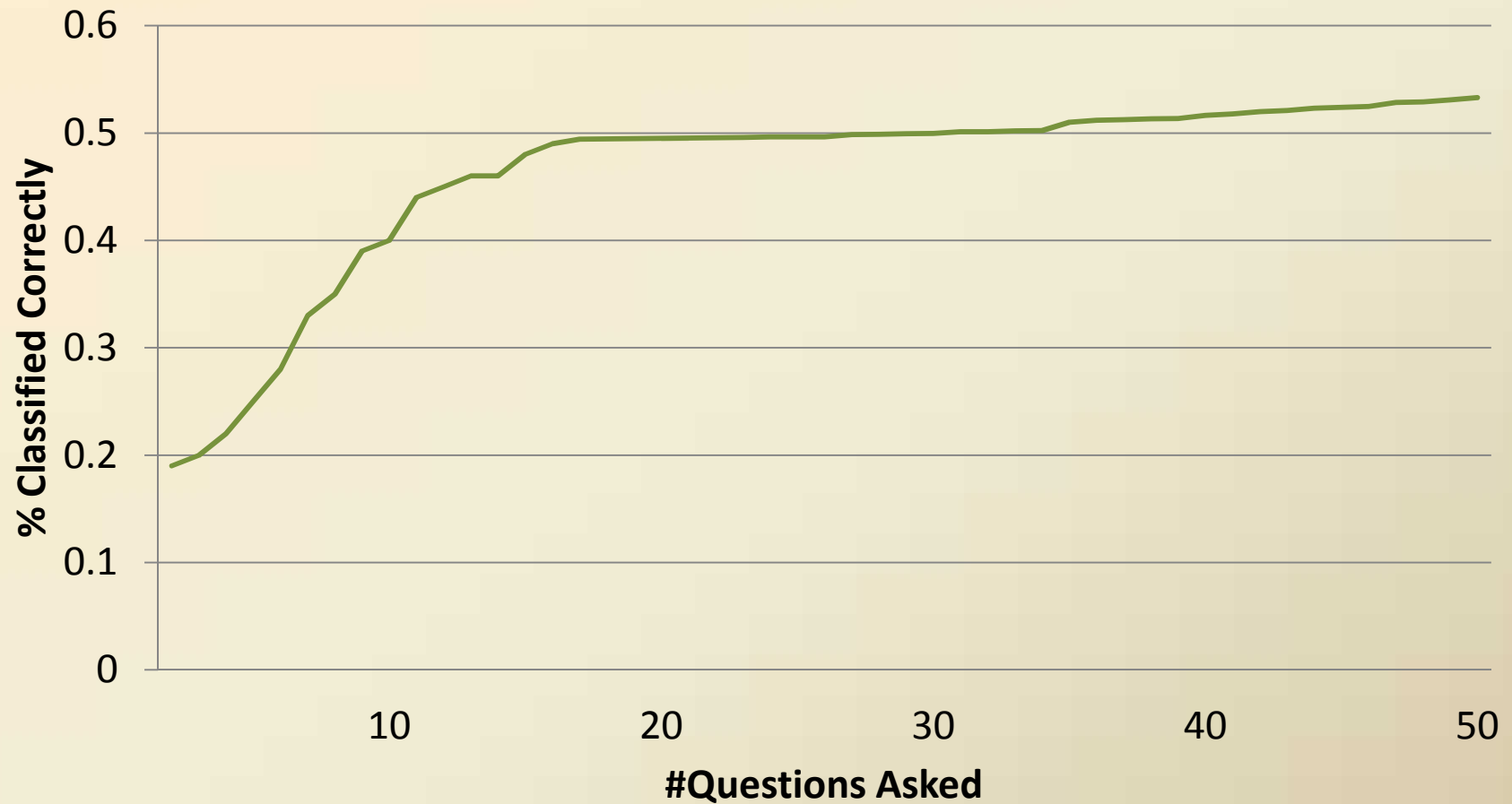
Results: With Computer Vision



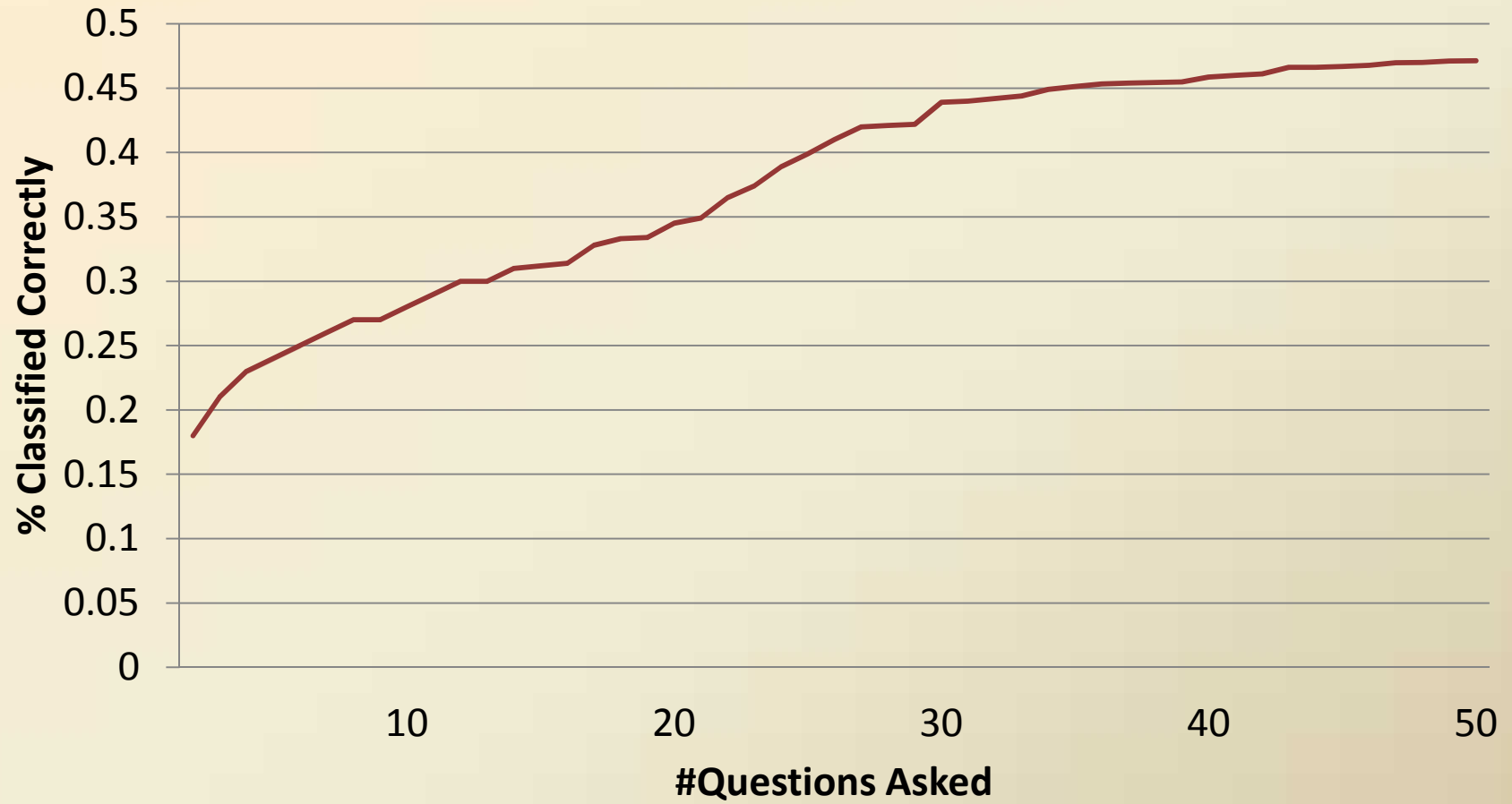
Experiments

- Analyzing how the question selection affects the accuracy & no. of questions required
- Take the 2nd , 3rd , etc. best questions according to information gain rather than taking the best one..

n = 2 (almost same for n=3)



$n = 4$



Analysis

- Reason behind a gap of around 0.15 in classification accuracy between $n=1$ & $n=2,3$?
- Let's go through some of the classes in Dataset

Vireo..



Class: 156



Class: 154

Warbler..



Class: 161



Class: 166

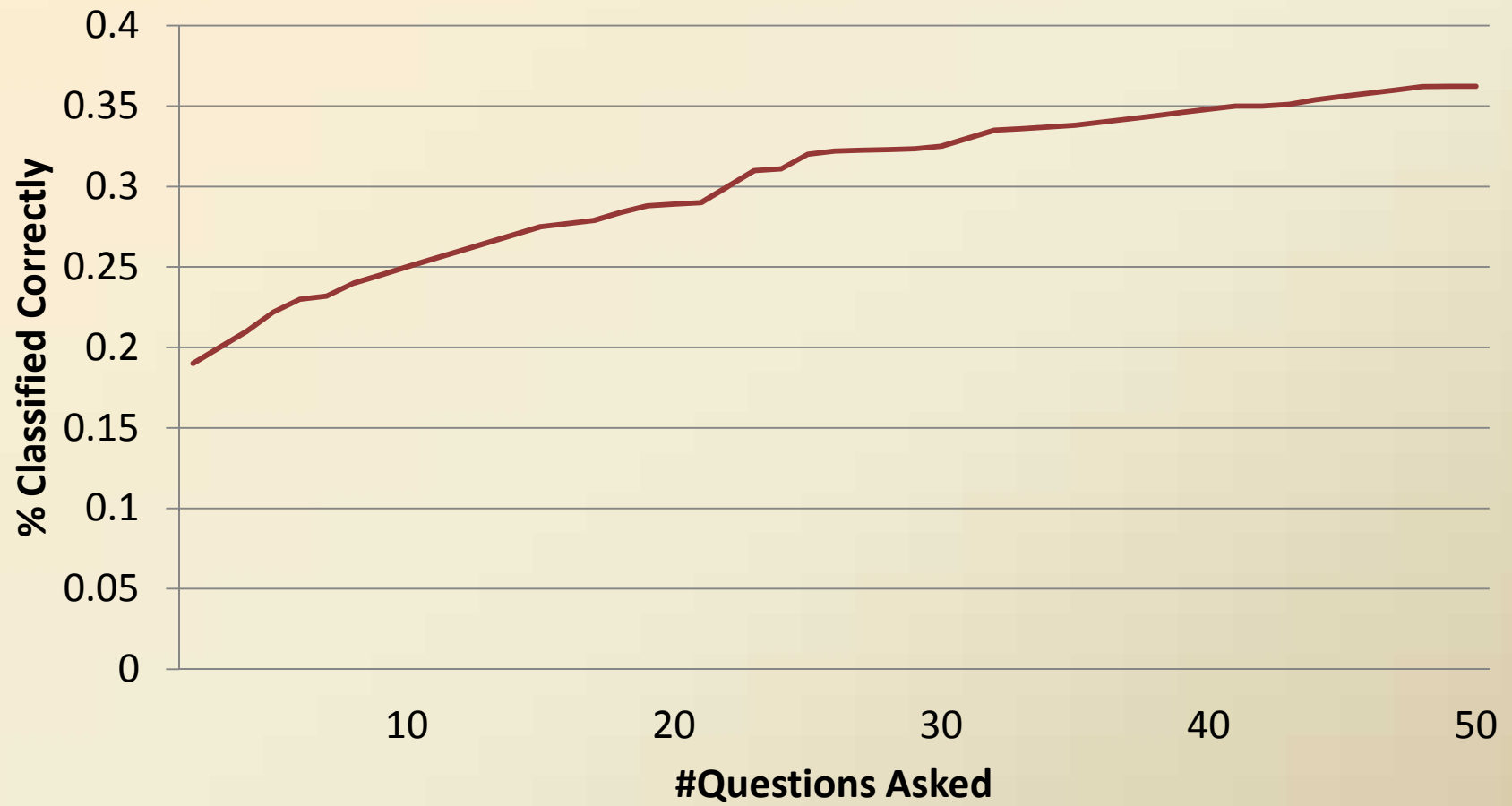
Reason...

- Maybe only the question with most information gain was able to classify between these pairs...

Experiment (Contd.)

- To verify it, repeat the same with only subset of the dataset, including classes exhibiting this characteristic.. (manually extracted some of the classes)

$n = 2$



Analysis

- Just using these classes do lower classification accuracy from around 53% to 37%
- Supports our previous reasoning

Thanks!