# Background Subtraction and Shot Boundary Detection

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# Key idea of segmentation

- Break images/videos into large, useful pieces
  - internally coherent pieces
    - same color; same color and texture; etc
  - simplify
  - Identify key objects

- Important simple applications
  - Background subtraction
  - Shot boundary detection

# Background subtraction

- Allocate pixels to
  - foreground
  - background

- based on a model of background appearance
  - usually obtained by watching the background from stationary camera

- Simple:
  - if  d(frame(i, j)-background(i, j))>thresh
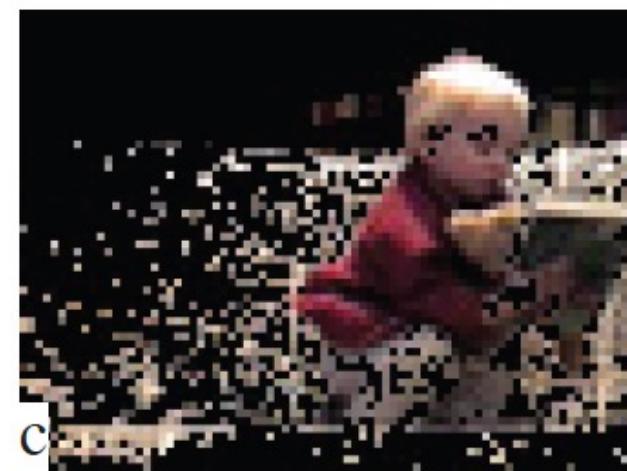    - foreground
  - else
    - background

# Shot boundary detection

- Break longer video into smaller "shots"
  - coherent bits of video
  - boundaries are big breaks in appearance
- Test some difference between frames i, i+1
  - SSD
  - difference in color histograms
  - difference between averaged boxes
- Split where this is big

- Not deep, but useful