

# Computer Vision

CSPP 56553

Artificial Intelligence

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# Roadmap

- Motivation
  - Computer vision applications
- Is a Picture worth a thousand words?
  - Low level features
    - Feature extraction: intensity, color
  - High level features
    - Top-down constraint: shape from stereo, motion,...
- Case Study: Vision as Modern AI
  - Fast, robust face detection (Viola & Jones 2002)

# Perception

- From observation to facts about world
  - Analogous to speech recognition
  - Stimulus (Percept)  $S$ , World  $W$ 
    - $S = g(W)$
  - Recognition: Derive world from percept
    - $W = g'(S)$
- Is this possible?