Where’s Waldo?

Using Neural Nets to Search an Image

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Problem

• Find Waldo!
  – Given an image, locate Waldo and highlight the area in the image
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• Find Waldo!
  – Given an image, locate Waldo and highlight the area in the image
  – Locate likely areas, then search those
    • Texture
    • “Face” recognition
Proposed Solution

- Using the histogram approach discussed by Lorsakul and Suthakorn, search first for red and white horizontal stripes.

- Then apply face recognition to further narrow the possible areas.
  - Face-recognition on its own probably not strong enough to search the entire image.
Data
Data

• Approximately 300 samples per picture
  – 30x30 chunks of the image
  – Slightly overlapped

• Classified by hand
  – Stripes or Not
  – Waldo or Not

• Many more negative than positive examples
Results

• Not good so far
  – Networks tend to default to “not Waldo”
  – Input Format is perhaps inappropriate
    • Could be simpler, allow for more definition between data types
    • Red vs White Histograms are repetitive
    • Input space is very large (122 inputs)
  – Unknown Complexity?
Improvements

- Simplified Input format
- Image Pre-Processing
- More Positive Examples
Questions?