October 10, 2007

Assignment 3 discussion:

- The results are very much dependent on training data timings.
- Possible extra features could be added using a grid encoding, e.g a 5x5 grid would mean 25 new features stating the no. of pixels in each block.
- Cannot use number of strokes as a feature as its not normally distributed, but can be used in preprocessing step.
- Inconsistent probability values; possible solutions: normalization, use just mantissa after averaging the values.
- The newly released "dollar recognizer" was also discussed.

Papers:

Recognition Of Mathematical Notation:

- The paper talks about recognizing mathematical expressions and notations.
- This paper was not discussed in the class.

An efficient syntactic approach to structural analysis of on-line handwritten mathematical expressions:

- Accuracy statistics are missing.
- Top down vs bottom up approaches of parsing were discussed
    - Most language compilers use top down approach.
- What could be possible measures of accuracy?
    - Boolean – all symbols recognized correctly true/false.
    - Parsetree – count number of correct operations.
    - Comparing quantities of symbols recognized correctly with actual quantities of symbols.
    - However all of the above approaches still don't address the issue of one symbol screwing everything.
- There is no clear metric or benchmark for accuracy of math. expression parsing at present.

Learning to Parse Hierarchical Lists and Outlines using Conditional Random Fields:

- Computation of lambda values missing.
- Conditional random fields mentioned but not discussed in the paper.

October 10, 2007

- Low accuracy results.
- Novel approach!
- A heuristic approach for determining line indents was discussed in the class.
- Applications:
    - Exporting word files.
    - Collapse text block, could be useful for code/pseudo code generation.
    - Power-point slides.
    - Conference presenter.

Statistical Visual Language Models for Ink Parsing :

- Requires having knowledge of the context
- Evaluations from only handful users.
- The authors could have postulated new feature set instead of blaming rubine's algorithm for classification errors.
- Can visual language be used for math expression parsing?
    - Outline of the expression could be one possible way to recognize it.
    - A typical outline will have lots of hatches. Might fail if the page actually has a drawing with hatches in it.