**Motivation:** Solve hand written and printed equations without needing a calculator.

**System Flow**

- **Camera Image**
- **Binarize: MSER**
- **Correct Skew**
- **Segment Line**
- **Segment Char**
- **Recognized Text**
- **OCR: SVM**
- **OCR: Tesseract**
- **MATLAB Solver**
- **Solution**
- **Confirm / Edit**

**Skew Correction: Affine Transforms**

1. **Segmented Line**
2. **RANSAC Fit**
3. **Projection Affine Transform**
4. **Skew Corrected Line**

**Support Vector Machine (SVM)**

- Similar to multidimensional MAP detector.
- Created training database using our own hand writing.
- Used libSVM[1] to calculate prediction model.

**Experimental Results**

- **Printed Text Recognition**
- **Hand Writing Recognition**

**Future Work**

- Increase SVM training dataset to make classification more robust.
- Increase vocabulary of SVM.
- Input correctly identified text into training database on-the-fly.

**References and Acknowledgements**

- Sam Tsai, our mentor, for providing guidance and for being extremely prompt in replying to our questions..
- [1] Chih-Chung Chang and Chih-Jen Lin, LIBSVM, National Taiwan University