Liu Yu

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Education

- State University of New York at Buffalo, United States (Aug., 2012 – Present)
  PhD Candidate, Computer Science and Engineering Department
  Advisor: Prof. Chang Wen CHEN

- University of Science and Technology of China (Aug., 2008 – July, 2012)
  B.S, Electronic Engineering and Information Science
  Cumulative GPA: 3.60/4.30 (86.9/100)

Publication

- Wang Baoyun, Liu Yu, "*A New Cloud Detection Method Based on Multiscale feature Extraction*", completed.

Research Interests

- Image and Video Processing
- Image Quality Improvement
- Computer Vision and Pattern Recognition

Research Experience and Activities

- **Graduate Thesis: The Feature Extraction for Multi-Terrain Objects Recognition in Remote Sensing Image (2012.3~2012.6)**

  In my graduate thesis project, I found a unique feature extraction approach for remote sensing image, which classified the image blocks into 6 terrain-related categories: mountain area, cloud

area, plain area, ocean area, fog area, and spot-shaped cloud area. The scheme of terrain object recognition was sought, and a series features were designed, which yielded satisfactory result. The average accuracy of 15 bi-classifiers was 95.72%. As a result, the final accuracy of 6 categories classifier was 85.5%. After experiment comparison with other methods, this series of feature stand out in the area. The final grade for my graduate thesis is A.

- **Undergraduate Research Project: Cloud Recognition in Remote Sensing Image (2011.7 ~2011.9)**

  During this 2 month, I developed an approach to recognize cloud section and non-cloud section in remote sensing images. Inspired by some other's ideas in IQA, I generated a group of features extracted from remote sensing images. The new features focused on differences in structure and orientation, which were easily presented by multi-scales and multi-orientations wavelet decomposition. After comparison with current popular methods, this approach yielded better result in classification accuracy. In this largest research project for undergraduates in USTC, I was graded A+ and honored the best award.

- **Research in Image Quality Assessment in Undergraduate Research Project (2011.3~2011.9)**

  I have been a RA in Image Processing Center on Image Quality Assessment (IQA). During the time, more than 20 algorisms was carefully studied and implemented. On my own, I proposed a new method base on human visual perception to obviously improve the effectiveness of resent IQA metrics by 11% at best.

- **The GUI part in the group experiment in Digital Signal Process (2010.10~2011.12)**

  I have been the programmer responsible to GUI part of the software which aimed at digital-audio-signal processing. As a five-students group, we accomplished the project in two month. During the time, I studied the GUI (Guidance of User Interface) of MATLB, generated separated program pieces from independent teammates into a whole, and made a satisfactory interface of software.

Honors and Awards

- Copper Medal of Outstanding Student Scholarship for three years (2008/2009/2010)
- The first prize in Contest of Thesis in Electromagnetics of University of Science and Technology of China (2010.1)
- The fourth prize in table tennis team competition (2009.4.19)