Online system rates images by aesthetic quality

(PhysOrg.com) -- An online photo-rating system developed at Penn State is the first publicly available tool for automatically determining the aesthetic value of an image, according to a Penn State researcher involved with the project.

James Z. Wang, associate professor of information sciences and technology, is one of the principal researchers on the Aesthetic Quality Inference Engine (ACQUINE), a system that judges the aesthetic quality of digital images. Wang said this tool is a significant first step in recognizing human emotional reaction to visual stimulus.

ACQUINE, which has been in development since 2005 and was launched in April 2009, can be found online at http://acquine.alipr.com . Users can upload their own images for rating or test the system by providing a link to any image online. The system provides an aesthetic rating within seconds.

Wang said the system extracts and uses visual aspects such as color saturation, color distribution and photo composition to give any uploaded image a rating from zero to 100. The system learns to associate these aspects with the way humans rate photos based on thousands of previously-rated photographs in online photo-sharing Web sites such as photo.net.

"In its current form, we've seen more than 80 percent consistency between the human and computer ratings," Wang said. "The improvements to the system that are currently under development show promise to get even higher performance.

"Furthermore, aesthetics represents just one dimension of human emotion. Future systems will perhaps strive to capture other emotions that pictures arouse in people," he said.

According to Wang, there also are opportunities to link the rating system directly to cameras so that when a photo is taken, the photographer can instantly see how it might be perceived by the public.

Wang worked with Ritendra Datta, a recent Penn State Ph.D. recipient and Jia Li, associate professor of statistics at Penn State. Funding for this project was provided by the National Science Foundation as part of ongoing research about the relationship between computers and visual concepts. The researchers previously used similar technology to detect authentic Vincent van Gogh paintings.

Provided by Penn State