

December 16, 2005
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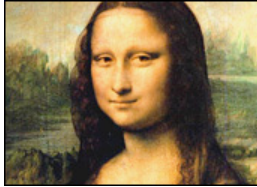
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Enigma of Mona Lisa Smile Cracked



By Robin Arnfield
December 15, 2005 1:10PM

According to findings published in the *New Scientist*, a British journal, the exact breakdown of Mona Lisa's emotions, as captured by Leonardo da Vinci, were 83 percent happy, 9 percent disgusted, 6 percent fearful, and 2 percent angry.

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» The enigma of Leonardo da Vinci's famous Mona Lisa painting has been cracked with the help of emotion-recognition software from scientists at the University of Amsterdam in the Netherlands and the University of Illinois at Urbana-Champaign.

The painting, which is now in the Louvre Museum in Paris, France, was painted at some point between 1503 and 1506, according to art historians.

After centuries of speculation about what the lady in the picture was thinking about, the software concluded that Mona Lisa was actually happy and only a little disgusted as she sat for Leonardo to paint her portrait.

Mostly Happy

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Dr. Nicu Sebe, a professor at the Faculty of Science of the University of Amsterdam in the Netherlands, used emotion-recognition software to come up with the exact breakdown of Mona Lisa's emotional state.

The software was developed with the help of Professor Thomas Huang, a group leader at the Image Formation and Processing Faculty at the Beckman Institute for Advanced Science and Technology of the University of Illinois at Urbana-Champaign.

Read My Lips

Sibu specializes in human-computer interaction, or HCI, a technology that allows computers to respond to human beings appropriately by reading the expression on their faces. He used HCI software to create a 3D computer image of Mona Lisa.

This image was compared with images of other women in Sibu's database to quantify the emotion depicted in Leonardo's portrait.

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The software looks at features such as the curvature of the lips and crinkles around the eyes to score six basic emotions. It scored Mona Lisa for happiness, disgust, fear, and anger, but found no evidence of surprise or sadness.

Other applications of emotion-recognition software might be to detect terror suspects on the basis of their emotions as well as their physical characteristics.

Professor Huang specializes in computerized image handling. He also is working on image-recognition software that will allow databases of images to be searched on the basis of their visual content rather than the textual title given to them.

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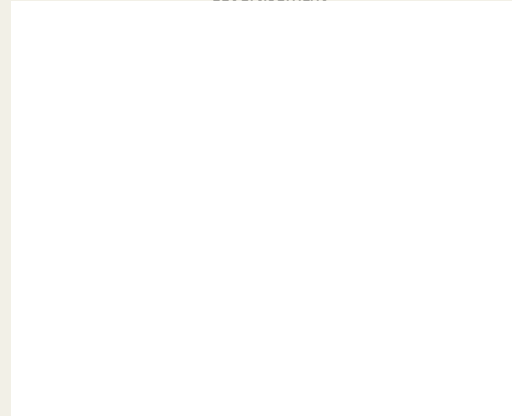
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