Publication: The Virginian-Pilot,**Section:**Hampton Roads,**Page:**13,**Date:** Wednesday, April 06, 2005

NORFOLK | HIGHER EDUCATION

MORT FRYMAN/THE VIRGINIAN-PILOT

K. Vijayan Asari, an associate professor of electrical and computer engineering at Old Dominion University, has been researching facial-recognition technology, which he hopes to apply to airport security systems. His work has earned him a $136,000 federal grant.

A springboard for research

Some hope exhibition will breed collaboration, recognition

BY PHILIP WALZER
THE VIRGINIAN-PILOT

NORFOLK — K. Vijayan Asari's research relies on algorithms and formulas that stretch across a page, sprinkled with Greek letters and plenty of parentheses. It deals with "pose and lighting invariant face recognition" and "luma-dependent non-linear enhancement of color images."

But the end-product is crystal clear – and that's precisely its value: If put into place in airports across the world, Asari said, his system could detect terrorists or other wanted people within milliseconds.

"This," the Old Dominion University professor said with satisfaction, "is a beautiful security project."

Asari's will be among more than 250 research projects featured today in an exposition sponsored by ODU and Norfolk State University. The exhibition, at ODU's Ted Constant Convocation Center, will be free and open to the public from noon to 6:30 p.m.

"A lot of times, outside the university walls, people think this is all abstract, theoretical research," said Adebisi Oladipupo, Norfolk State's vice president for research and technology. "But it has implications not only for human

Please see **Reality,** *Page* **B4**

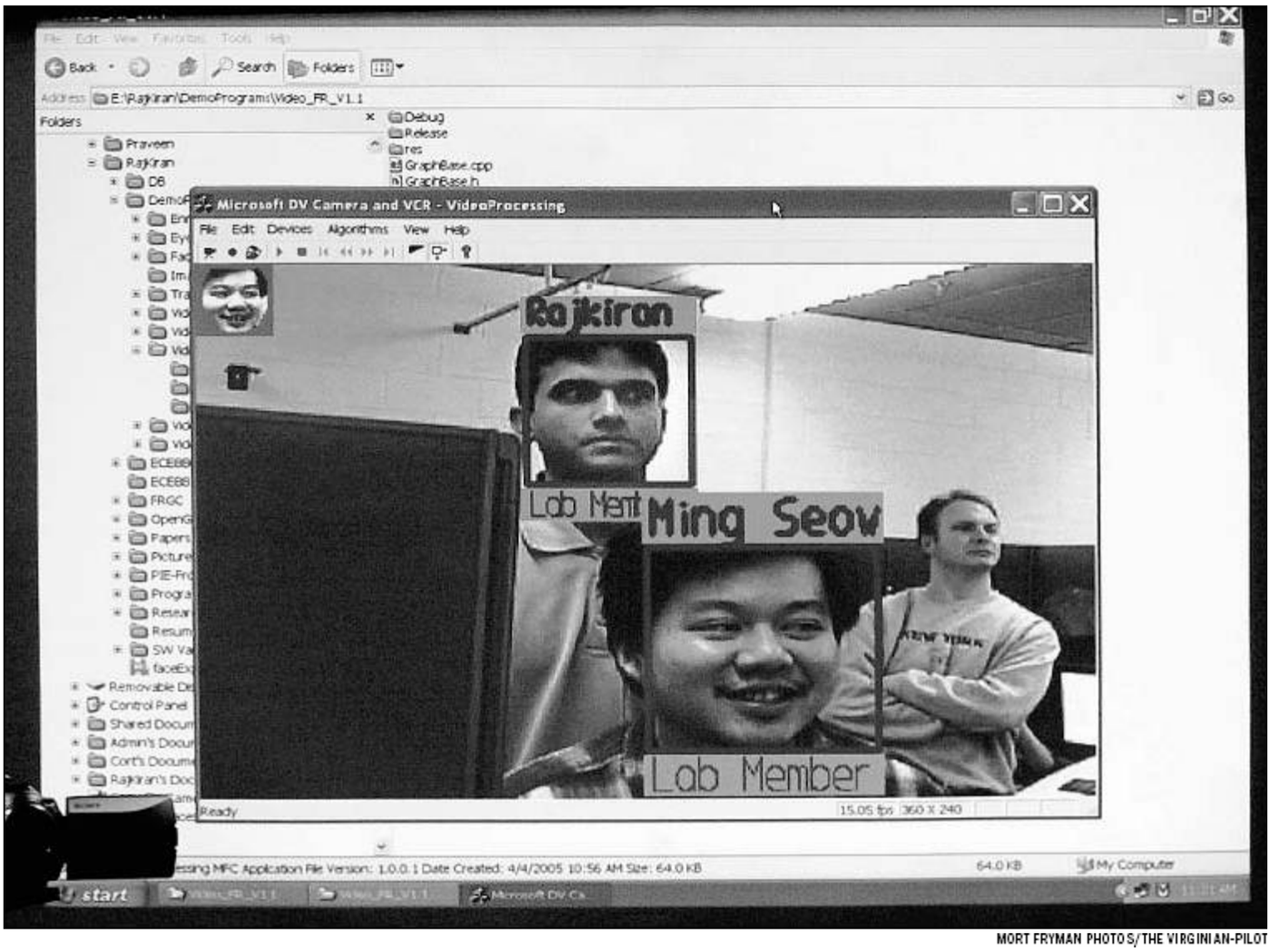
WANT TO GO?

WHAT 250 research projects will be featured today in an exposition sponsored by Old Dominion University and Norfolk State University.

WHEN The exhibition will be free and open to the public from noon to 6:30 p.m.

WHERE ODU's Ted Constant Convocation Center

Publication: The Virginian-Pilot,**Section:**Hampton Roads,**Page:**16,**Date:** Wednesday, April 06, 2005



MORT FRYMAN PHOTOS/THE VIRGINIAN-PILOT

Members of K. Vijayan Asari's team are picked up by a facial-recognition camera and selected by the software for close-up. On the projection screen are Ming-Juna Seow, front center, and Rajkiran Gottumukkal.

Reality: Variety of projects on display

Continued from Page B1

life improvement, but for economic development."

Oladipupo's counterpart at Old Dominion, Mohammad A. Karim, hopes the event will encourage collaboration not only between ODU professors but between the universities.

And Asari hopes to get more recognition – and more funding – to turn his research into reality. So far the project has won $136,000 from the Department of Defense. That's a relatively measly amount, as grants go, but ODU was one of only seven universities to get funding in that area.

Asari, a native of southern India, sought to enable a computer to recognize faces among thousands streaming across a video. His four-step process begins with "image enhancement," which can detect people in shadows.

The other stages are classifying and identifying skin, zeroing in on faces and tracking them as people scurry through airports.

K. Vijayan Asari hopes to get more funding and recognition after the exhibition at ODU.

The research, he knows, raises prickly privacy issues. But Asari said innocent faces would be instantly wiped from the computer's memory. "This will not affect the privacy of people," he said.

Asari, 48, an associate professor of electrical and computer engineering, came to ODU in 2000 from Nanyang Technological University in Singapore. He gives much of the credit for his developments at Old Dominion to his 12 graduate students, saying, "They are the real researchers."

But his facial-recognition work isn't what he's proudest of. Pointing to an "excellence in teaching" award he won from ODU's engineering college last year, Asari said, "I like this more than my research."

Karim, the vice president of research, who also works in Asari's research group, said the benefits go far beyond homeland security. For instance, Asari said, the range of vision of senior citizens tends to be darker, with images more easily obscured. He envisions producing a set of goggles that would improve their vision behind the wheel.

The research day will feature panel discussions and a speech at 5:30 p.m. by Nobel Prize winner Horst L. Stormer on "Small Wonders: The World of Nanoscience."

The topics on display range from "a survey of the audit procedures utilized by churches" to "the effect of field transistors." Not all of them are the work of professors.

Henry Lovelace, a senior majoring in physics at Norfolk State, will be showcasing his mathematical model for coughing, which uses, among other concepts, Poiseuille's Law of Viscous Fluid Flow and Newton's Law of Friction. His main finding: To generate the greatest velocity to extract a foreign object, a trachea contracts to two-thirds the size of its normal radius.

"This is preparation for what I want to do in my profession," said Lovelace, 23, a Lynchburg native who hopes to become a physics professor. "Also, I can see how my competition does so I can rate myself and see how I can become a cut above the rest."

■ *Reach Philip Walzer at 222-5105 or* **phil.walzer@pilotonline.com.**