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ROBOTICS, BIOMETRICS, AND ASSISTED LIVING APPLICATIONS WIN 1ST STAGE OF CANESTAVISION COMPETITION

Leading Universities Yield Winning Entries in Contest to Demonstrate Practical Applications for Low-cost, Computer and Machine Vision Applications

SAN JOSE, CALIFORNIA - January 24, 2005 - Canesta Inc., the pioneer and leader in electronic perception technology, today announced the winners for the first phase of its CanestaVision™ design competition. The competition, which was conducted throughout the fall, invited contestants to develop useful applications for electronic perception technology, and submit abstracts and proposals for their implementation. Winners of the first phase are being given hardware and software development kits to enable them to actually build their applications, with the expectation they will be entered in the second and final phase of the competition occurring later this year. Electronic perception technology is a recent development enabled by low-cost, tiny 3-D sensor chips that can be used to make everyday devices “see” and react to the world around them.

The contest winners include entrants in several major categories: robotics, assisted living for the handicapped, security and facial recognition applications, and industrial applications.

“Practical, 3-dimensional computer vision has been a goal of computer scientists for several decades,” said Jim Spare, vice president of marketing for Canesta, sponsor of the contest. “We are very excited with the practical applications being proposed by our contestants, and the way that such applications effectively expand the scope of electronic perception technology well beyond the current hotbeds of activity - security, automotive, and man-machine interfaces.”

The winning proposals, all from universities, demonstrate the potential broad applicability of Canesta’s revolutionary technology. They are listed here in random order:

- Real-time 3D vision for humanoid robots, by Daniel Huber, James Kuffner, and Nicolas Vandapel, Vision and Mobile Robotics Laboratory, Carnegie Mellon University
- A curb line detection and localization system, by Xiaoye Lu and Roberto Manduchi, University of California, Santa Cruz
- Hybrid depth imaging, by Michael Dixon, Roman Stanchak, and Robert Pless, Washington University in St. Louis.
- 3D biometric face recognition, by M. Pawan Kumar, Pushmeet Kohli, and P.H.S. Torr, Oxford Brookes University, Oxford, UK
- 3D head pose estimation and tracking with depth-driven image processing tools, by Roman Stanchak, Michael Dixon and Robert Pless, Washington University in St. Louis.

- Calibration of a heterogeneous network of color and depth cameras, by Sudipta Sinha, University of North Carolina, Chapel Hill
- A variable-length virtual cane for the visually impaired, by Tim Oates and Gabe Chaddock, University of Maryland Baltimore County
- "Eye-in-hand" range sensor for robotic grasping, by Matei Ciocarlie and Andrew Miller, Columbia University
- Visual information station with hand pointing detector, by Matteo Valentini, Luigi Di Stefano, ARCES-University of Bologna, Italy
- Wheelchair collision avoidance using 3D sensors, by James Tung, Jesse Hoey, and Alex Mihailidis, University of Toronto

Each of these winners will receive a \$7,500 development kit that consists of a CanestaVision 3-D sensor chip, a USB interface, and application program interface (API) software. The winners are expected - but not required - to use the kits to build working versions of their proposed application, and enter them in the "implementation" phase of the contest. The implementation phase, which boasts a \$10,000 first prize, a \$5,000 second prize, and summer internships at Canesta for two promising student entrants, is open to all comers, including Phase 1 entrants and winners. The only requirement is that a CanestaVision sensor be incorporated into the working application. The deadline for Phase II entries is 12:59 PM PDT (GMT-7), June 10, 2005.

Canesta is making additional development kits available for purchase for new entrants and those who did not win one in Phase 1, with substantial discounts for students.

Final winners will have their application demonstrated in early August at SIGGRAPH 2005, a top industry conference. Contest judges have been selected to provide a broad range of industry, venture capital, academic, and entrepreneurial perspectives, and include an executive from Honda, a partner with New Enterprise Associates, a professor from Duke University, and several Canesta executives.

The competition is governed by Contest Terms and Conditions, which may be found, as well as copies of each of the winning proposals, at <http://www.canesta.com/contest>.

About Canesta

Canesta is the inventor of a revolutionary, low-cost electronic perception technology that enables machines and ordinary electronic devices to perceive and react to nearby objects or individuals in real time.

When sight-enabled with Canesta's unique electronic perception chips and software, consumer, automotive, industrial, military, and medical products can gain functionality and ease of use not possible in an era when such devices were blind.

Canesta believes future applications of electronic perception technology are virtually as broad as the imagination. They may include intelligent automobile airbag systems that can sense the size and position of an occupant to control deployment and avoid injury, a low-false-alarm security system that could detect the difference between an intruder and normal activity, such as a pet moving or child

visiting the bathroom at night, or robotic tools that can successfully operate in a dynamic, rather than static environment.

Canesta was founded in April 1999, and is located in San Jose, CA. The company has filed in excess of forty patents, 12 of which have been granted so far. Investment to date exceeds \$36 million, from Apax Partners, Carlyle Venture Partners, Intel Capital, JP Morgan Partners, Korea Global IT Fund (KGIF), TechFund Capital, Thales Corporate Ventures, and Venrock Associates.

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Additional background information is available at www.roeder-johnson.com.

See also: *"Canesta Announces \$15,000 Purse, \$75,000 in Free Hardware in Electronic Perception Design Contest"*, November 5, 2004, <http://www.roeder-johnson.com/RJDocs/CAcontest1104.html>