Georgia Tech

Research News

Georgia Institute of Technology
Research Communications Office
Atlanta, Georgia 30332-0800
404-894-3444

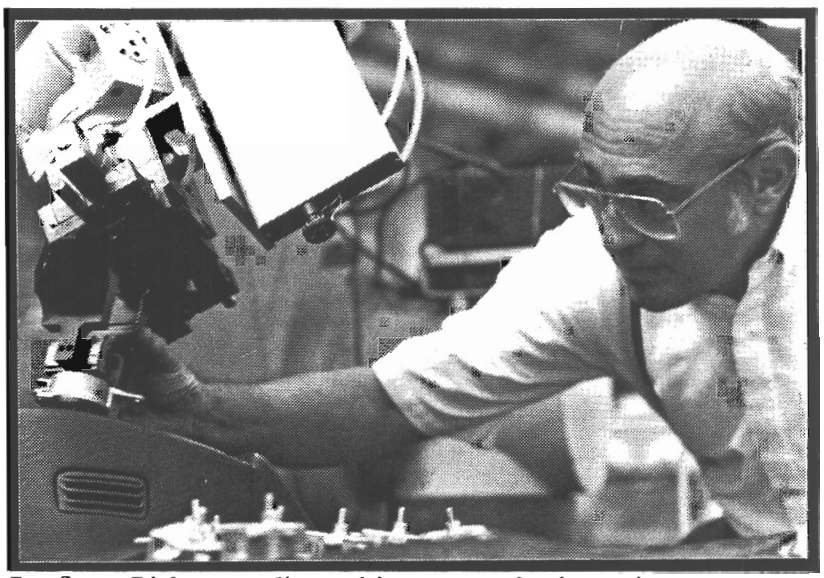
For Immediate Release
September 12, 1991

SIMPLIFYING COMPUTER VISION: COMPANY LICENSES TECHNOLOGY FOR LOW-COST INSPECTION & GUIDANCE SYSTEMS

The technology behind a low-cost computer vision system developed at the Georgia Institute of Technology has been licensed to an Atlanta-based company, Dickerson Vision Technologies (DVT).

The company plans to market a line of integrated vision systems which could be used for automated inspection, vehicle guidance and similar applications -- at a cost well below that of competing equipment. The first product, known as the "Stinger 70," relies on proprietary techniques to acquire and process images.

The exclusive license was granted under a new initiative to encourage the commercialization of technology developed at Georgia Tech. The technology was originally developed for the Material Handling Research Center (MHRC), a consortium of four universities and 30 member companies interested in material handling issues.



Dr. Steve Dickerson adjusts vision system for inspecting components. Developed at Georgia Tech, technology for the system was licensed to an Atlanta company. (Color/B&W Available)

"The computer vision system allows processing of visual information by an embedded microcomputer in a way that is reliable, objective, fast, accurate and repeatable," explained Ken Oosting, president of DVT. "We are offering a low-cost way to improve the quality of our customers' products."

The vision system uses special optics and illumination to create high-contrast, low distortion images especially suitable for machine vision applications.

- OVER -

FOR MORE INFORMATION:

ASSISTANCE/PHOTO: John Toon or Lea McLees, (404) 894-3444
COMPANY: Ken Oosting, DVT, (404) 872-2189
TECH. LICENSING: Barry Rosenberg, (404) 894-6287
WRITER: John Toon

A unique approach in the use of a charge-coupled device (CCD) allows the system to selectively scan only information that will be of use, dramatically reducing information processing requirements and image acquisition time.

"Visual information is complex and its analysis can be computationally intensive, because there is so much information in the image," Oosting noted. "One of the problems is sorting out what is important information in the image and what is not."

For one of the company's customers -- a manufacturer of graphite brushes -- the outer edge of the part is critical to the performance of the equipment using it. In that application, the system will scan only the perimeter of the brushes to ensure that each one meets critical tolerances. The remainder of the image is not important, and so is not processed.

Narrowing the amount of information to be processed allows the system to work much faster.

For another manufacturer, the system will inspect consumer products, ensuring that the correct label is applied in the proper position on the container.

Because of their reliability, machine inspection systems can provide important advantages over human inspectors. Because the DVT system can be accurate to within 1/10,000th of an inch, it can also be more precise.

"It's a very neat solution to an information processing issue," Oosting added. "You could have people doing the inspections, but people are not as objective, and they can't get anywhere near that accuracy."

Contained in a case about the size of a small book and weighing less than two pounds, the system could be incorporated into many production lines to enhance quality assurance, he said. The hardware portion of the system is sold for less than $2,000; software developed for customers' specific applications is also available from the company.

The devices can be used independently, joined together in a series, or coupled to a computer or programmable logic controller for higher-level processing.

The vision system was developed by Dr. Steve Dickerson, Dr. Kok-Meng Lee and other researchers in the MHRC at Georgia Tech. Dickerson and Lee, both professors of Mechanical Engineering at Georgia Tech, will be active in the research of advanced vision technologies.

Dickerson serves as director of product development for DVT. "If the faculty member who developed the technology is involved in the business, the technology transfer from the laboratory to industry is much smoother," Oosting suggested.

Organized in 1990, the company has received an exclusive license to the technology from the Georgia Tech Research Corporation (GTRC) under a new initiative designed to encourage commercialization of technology developed at the institution.

In return, GTRC received both equity in the firm and the right to future royalties on products that are sold. To help move the technology into the commercial arena, GTRC underwrote patenting costs and provided other assistance to the company.

"There are many innovations which address a particular market niche and are suitable for company start-ups," explained Barry Rosenberg, Technology Licensing Executive at Georgia Tech. "To encourage Georgia Tech faculty to participate in these start-ups, we are offering to minimize their up-front risk."

He noted that several years often elapse between the licensing of a new technology and the first sale of products based on that technology. For small companies, that development period can cause financial difficulty. By minimizing early financial commitments, Rosenberg hopes to enhance the success of start-up companies using Georgia Tech inventions.

DVT already has recorded sales, with a number of units being tested by customers. Oosting sees a substantial market for the low-cost vision systems in applications where existing equipment is not cost-effective.

The company is a tenant of the Advanced Technology Development Center (ATDC), an agency organized at Georgia Tech to help encourage the formation of new companies. The ATDC assists companies with a range of services designed to enhance their potential for business success.

Other researchers involved in development of the system for the Material Handling Research Center include Bill McKinney, Tom Single, Da-Ren Li, E. H. Lee and Mike Burrow.

###