

Research

ITRI Lab @ Carnegie Mellon was established in 2003 as part of an agreement between the government-affiliated Industrial Technology Research Institute (ITRI) of Taiwan and Carnegie Mellon University. Research at the multidisciplinary Lab integrates efforts from faculty and students from many different centers at the university, and focuses on circuit design and applications in communications, information technology, computer and consumer electronics, and multimedia. The director of the ITRI Lab @ Carnegie Mellon also leads the Advanced Multimedia Processing Lab (<http://amp.ece.cmu.edu/>) which provides a research base for many ITRI projects, as well as the newly established International Collaboration for Advancing Security Technology (iCAST-Carnegie Mellon), another research collaboration with the Taiwanese government.

ITRI Projects

Visual Computing Technologies

- Security and Surveillance
- Multi-view Imaging
- Robotic Vision

Micro-Electro-Mechanical Systems (MEMS)

- Inertial Sensors and Applications
- CMOS-MEMS Design
- Integrated MEMS Design Methodology

System-on-a-Chip (SoC) Design and Methodology

- Mixed-Signal Design
- Energy-Aware Design

In December of 2005, an ITRI symposium in Taiwan showcased two examples of new technologies developed since the inception of the ITRI Lab @ Carnegie Mellon:

- **ICTrack**, a software toolbox that is capable of tracking everything from the family car to conducting surveillance of busy transportation hubs. ICTrack's development was prompted by the increased demand for both Internet and physical security.
- **A dime-size motion sensor** designed to track lost or stolen laptops and cell phones. It can also be used to assist with personal navigation. The sensor can be embedded in any commercial product. Law enforcement officials in both the U.S. and Taiwan are interested in its potential for tracking missing children.

Educational Outreach

An educational outreach program between the ITRI Lab @ Carnegie Mellon and the National Chiao-Tung University (NCTU) in Taiwan brings ten visiting researchers to Carnegie Mellon for six-month periods for research collaboration. Additionally, an undergraduate student exchange program allows up to ten of our students to study at NCTU for a semester or a year, with the option of an industrial internship in the summer. Students from NCTU also have the opportunity to come to Carnegie Mellon to study.

For more information about the ITRI Lab @ Carnegie Mellon, visit <http://www.ece.cmu.edu/~itri/>.

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