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Intel Labs' Collaborative Efforts Speed Technological Breakthroughs, Shape Future of Computing

Intel Announces New Research and Partnership Efforts at Annual R&D Event

NEWS HIGHLIGHTS

- -- Intel Labs announced a second Intel Science and Technology Center (ISTC) to open with a focus on secure computing, hosted at the University of California, Berkeley in collaboration with several other universities.
- -- More than 35 research projects from around the globe touching visual computing, security and authentication, user experience, cloud computing and more on display at annual Intel Labs research event.
- -- Intel Labs to release two new open source software packages: a distributed scene graph package to increase the maximum number of participants in 3-D Web applications, such as virtual worlds, by more than 20 times, and an advanced ray tracing package to accelerate the rendering of photorealistic images on Intel-based systems by 100 percent.

MOUNTAIN VIEW, Calif.--(BUSINESS WIRE)-- Intel Labs opened its doors to the media, academia, partners and customers today at the 9th annual Research at Intel event, where Justin Rattner, Intel Corporation chief technology officer, unveiled more than 35 innovative research projects underway that will help transform the future of technology.

Many of these projects are the result of joint research among different divisions of Intel and its academic and industry partners. Additionally, Rattner announced the latest Intel Science Technology Center (ISTC), a new collaborative framework for security research between Intel and several leading universities.

Focused on secure computing, Intel's latest ISTC is hosted at the University of California, Berkeley, and also includes partnerships with Carnegie Mellon, Drexel, Duke and the University of Illinois at Urbana-Champaign. This center represents the next $15 million installment of Intel's recently announced 5-year, $100 million ISTC program to increase university research and accelerate innovation. As with the first ISTC for Visual Computing, the new Secure Computing center will encourage tighter collaboration between university thought leaders and Intel.

"The co-principal investigators from Intel and UC Berkeley will lead a talented team of researchers from across the country to address today's most challenging problems in computer security," said Rattner. "Forming a multidisciplinary community of Intel, faculty and graduate student researchers will lead to fundamental breakthroughs in one of the most difficult and vexing areas of computing technology."

The ISTC for secure computing will focus its research on a variety of areas over the next 5 years, including making personal computers safer from malware, securing mobile devices, both in terms of data protection for the individual, as well as making it safer to download data to devices, and use of third party applications. Another key area researchers will address is how to protect personal data once it is scattered throughout the Web. Today people share their personal data all over the Internet when signing up for a variety of services. Users exert little to no control over their personal data once they've granted access to it, and as such, the new ISTC will look into ways to give people more control and make their data more secure.

A Glimpse into the Future of Technology, Today

Demonstrations at the Research at Intel event spanned such areas as visual computing, security and authentication to user experience and cloud computing, among others, and are the result of ongoing, collaborative efforts between Intel and its industry and academic partners. For example:

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--  "Unleashing the Potential of Intel(R) Processor Graphics" for
    cryptography operations demonstrates how faster and more efficiently
    security measures can be achieved using the 2nd Generation Intel(R) Core
    (TM) processor-based platforms.
--  "Authentication of the Future" shows how identify theft can be avoided
    when using a trusted client with advanced authentication and user
    presence techniques by locally establishing your identity and confirming
    it with Web-based services, improving both the security and user
    experience.
--  "Magic Mirror" provides a look at a virtual shopping experience with a
    realistic avatar of the shopper dressed in the latest fashions. This
    demo shows a 3-D avatar that tracked movements in real-time and changed
    body dimensions using gesture.
--  "Steerable Sound" shows spherical loudspeakers that not only give
    best-in-class sound reproduction, but also dynamic, steerable sound
    analogous to traditional acoustic musical instruments.
--  "Automatic Classroom Collaboration" shows how students can form
    collaborative groups automatically using Intel-based classmate PCs.
    Proximity detection technology finds classmate PCs near a student and
    helps to form a group automatically with students who are in the
    vicinity. With a click of a button students can form groups, start
    collaborating on a project, take a quiz together or compete with each
    other.
--  "Wireless Energy Sensing Technology" (WEST) is an easy-to-use plug-in
    device that uses pattern recognition to determine when different
    electrical loads turn on and off in the home. Using a simple
    application, homeowners can examine a variety of energy reports to help
    them better manage their energy consumption.
--  The "Many-Core Applications Research" community shows how more than 80
    worldwide institutions are researching future software using Intel Lab's
    48-core single-chip Cloud Computer concept chip.
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Intel Software Code Releases

As part of its strategy to increase collaboration across the industry and academic sectors, Intel Labs announced it will release source code for its Distributed Scene Graph 3-D Internet technology. This code is part of an ongoing effort to augment the OpenSim open-source virtual world simulator and will enable developers to build virtual regions where people can

work or play online with a cast of thousands, instead of being limited to less than a hundred today - a more than 20 times improvement. Virtual environments have applications from entertainment and education to social networking. Intel showed an example of how the technology could enable a massive multi-player "game" to train first responders for different disaster scenarios.

Also this month, Intel Labs will release as open source its state-of-the-art offline ray tracing code to researchers and developers. Ray tracing is a computer graphics technique that produces photo-realistic images by tracing imaginary light rays to determine where and how every part of an object should be illuminated. Intel showed how this code will improve the speed by up to 100 percent on Intel-based systems. This advanced ray tracing code targets professional applications and is a separate effort from the company's game-focused, real-time ray tracing project shown previously. The code is expected to find use in commercial applications such as designing cars, making movies and visualizing new architectural designs.

About Intel

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    Source: Intel Corporation