



Intel Labs Announces Latest Science and Technology Center Focused on Next Generation of Pervasive Computing

NEWS HIGHLIGHTS

- Intel Labs announces its fifth [Intel Science and Technology Center](#) focused on pervasive computing.
- The center is hosted at the [University of Washington](#) in collaboration with five other universities.
- Intel's collaboration with university researchers will accelerate the development of next-generation technologies that can learn, adapt and interact to provide consumers with a personalized experience.
- Initial research is focused on three concept applications: mobile health and wellbeing; task management systems; and a family coordination system.

SANTA CLARA, Calif.--(BUSINESS WIRE)-- The newest Intel Science and Technology Center (ISTC) will focus on delivering technologies that offer a richer, more personalized experience to consumers of the future. By creating and funding an ecosystem of leading researchers in the field and providing a collaborative environment, Intel Corporation and its partners' goal is to accelerate the development of next-generation technologies capable of continuously learning and adapting to consumers' needs.

The new Intel ISTC for pervasive computing is the fifth center to open this year and underscores Intel's commitment to establishing and funding the collaboration of university research to fuel innovation in key areas. Earlier this year Intel announced ISTCs for visual computing, secure computing, cloud computing and embedded computing.

"The next generation of pervasive computing systems will continuously learn environments, objects, schedules and preferences of their users," said Limor Fix, Intel's director of academic programs and research. "These future apps will be capable of supporting complex tasks such as cooking a soufflé or building a complicated piece of furniture. Consumers will have a far richer experience than the technologies of today can offer and will be able to spend far more time achieving their goals than figuring out how to make the technology work."

Pervasive Computing Research

The ISTC for pervasive computing research will focus on developing applications that are organized into the following themes: low-power sensing and communication; understanding human state and activities; and personalization and adaptation. To ensure the

trustworthiness and security of the systems involved and to safeguard privacy, researchers who focus on these challenges will be involved in all of the center's projects. The center will explore task spaces that interact seamlessly with users by combining multiple cues such as a person's context, gestures and voice, and that provide assistance through multiple output modes such as audio and projected imagery. Ultimately, future systems will support applications that have much deeper awareness of users and their activities, context and goals. They will be able to learn and adapt continuously to consumer habits, routines and preferences.

Research at the new ISTC will center largely on developing new algorithms to extract complex context and activity information from sensor data. For instance, the algorithms will not only sense that someone is in the kitchen but that the person is slicing ingredients for a particular recipe and whether the cuts are too thick for the recipe being used.

Pervasive Computing Applications

Improving consumers' physical and emotional wellbeing, assisting in the coordination of busy lives and enhancing the home functionality are high-value application areas. The ISTC for pervasive computing will develop three concept applications:

- **Mobile Health and Wellbeing:** To improve physical and emotional wellbeing, the center will explore developing technologies to help consumers identify, manage and reduce stress and anxiety in their daily lives. Researchers aim to develop mobile systems that can understand the complex context of their users' lives – both in and outside the home – and learn about their routines, interactions and stressors.
- **Family Coordination System:** Building a smart home system that can learn, recognize and track the everyday activities of all members of the family. The system will track activities at different levels and use activity information to assist families in planning.
- **Task Space, Smart Kitchen:** A demo space that illustrates how pervasive computing can help with physical tasks that don't typically involve a computer -- cooking a complex recipe or building a piece of furniture, for instance.

With the University of Washington operating as the hub, the ISTC for pervasive computing combines researchers from six U.S. research universities including Georgia Institute of Technology, Cornell University, University of Rochester, UCLA and Stanford University. The ISTC for pervasive computing is co-led by Dieter Fox, associate professor of Computer Science & Engineering at the University of Washington, and Anthony LaMarca, a senior scientist at Intel.

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