Introducing the Intel Collaborative Research Institutes

21st Century Industry-University Collaboration



Rethinking the Structure of Collaboration

- Intel has funded academic research for 40 years
- Began to rethink the model a few years ago
- Focused on moving ideas to market faster
- Combined our best known methods and made them even better:
 - Fund at a level that ensures deep engagement
 - Create a mutually relevant, high impact agenda
 - Co-locate Intel and academic researchers on campus
 - Build an active, multi-university research community







A Model for Industry-University Joint Research



- Designed to foster collaboration between Intel & Academia
- Funds collaboration for 3-5 years and spans multiple institutions
- Encourages collaboration among the best researchers in the field
- Locates Four Intel funded researchers per center to work on-campus
- Requires public domain IP and open source software to increase impact

ons field -campus ase impact



A Record of Success Intel Science & Technology Centers (ISTCs)



* Other names, logos and brands may be claimed as the property of others.



Spoke Univ. Researchers

Embedded Computing



Growing Our Global Presence Intel Collaborative Research Institutes (ICRIs)

- Based on ISTC model, customized by region
- 3 New ICRIs launched in Germany, Israel, in U.K.
- IVCI and ICCCC join family
- \$40M total over 5 years
- New labs expand Intel Labs Europe network





Secure Computing

UNIVERSITÄT DES **SAARLANDES**

Visual Computing (IVCI)

Taiwan



Connected Context Computing (ICCCC)

The Intel Collaborative Research Institute for Computational Intelligence



Prof. Uri Weiser Academic PI



Technion Haifa



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Prof. Naftali Tishby Academic PI

Hebrew University Jerusalem



Computational Intelligence

Sensors Context 55 8 8 8 **Machine** Learning

Cloud

Next Generation Intelligent Devices

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Heterogeneous **Architectures**



Computational Intelligence



Machine Learning + Heterogeneous Architectures Next Generation Intelligent Devices

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Research Themes



Audio/Visual Learning Systems

Inte

The Intel Collaborative Research Institute for Secure Computing



Dr.-Ing Matthias Schunter Joining Intel Labs

in June



TU-Darmstadt Academic PI



Prof. Dr. Ing. Ahmad-Reza Sadeghi Professor, System Security Lab







"Recent events have given us all a wake-up call on security...

I've given our company a charter to make this job one."

- Paul Otellini

Interview with Charlie Rose February 26, 2010



Mobile and Embedded Devices An integral part of daily life

Smart devices are an attractive target for future cyber attacks



Intel Collaborative Research Institute for Secure **Computing @ TU-Darmstadt**

Collaborative research between industry & academia to dramatically advance trustworthiness of Mobile & Embedded devices/ecosystem





The Intel Collaborative Research Institute for **Sustainable Connected Cities**





Imperial College London



Prof. Yvonne Rogers Julie McCann



Every second the global urban population grows by 2 people.

The urban population is expected to increase from 3.6 billion people in 2011 to 6.3 billion in 2050.

500 Cities with populations of +1 million will be joined by 200 more in 20 Years

City dwellers have a lower carbon footprint than rural inhabitants

On average, larger Cities produce more wealth and innovation per capita than smaller ones.

Cities consume two thirds of the World's energy and contribute to 70% of its greenhouse gas emissions

Leakage rates of 50% are not uncommon in urban water distribution systems







Sustainable Connected Cities research framework



Human, Environment Interface



