EVENT SCHEDULE

Time	Event
12:00-1:20	Buffet Lunch & Registration
1:20-1:30	Welcome
1:30-2:15	*Special-Purpose Data Management,* Stan Zdonik
2:15-3:00	*Black-Box Tracing and Safe Parallelism: Tools for a Concurrent World,* John Jannotti
3:00-3:15	Break
3:15-4:00	*Optimization Meets Telecommunications: A Marriage Made in Heaven,* Pascal Van Hentenryck
4:00-6:00	Meet the Partners Reception

EMAIL REGISTRATION
To: abt@cs.brown.edu
By: Monday, September 15, 2008
Please provide name, company, and email and mailing address.

DIRECTIONS TO THE CIT BUILDING
*From I-95, take Exit 18 to I195E
*Take Exit 2, India Street
*Bear left off of the exit and take a right on to Gano Street at the stop sign
*At the 3rd light, turn left on Angell St.
*Continue for several blocks to the 2nd light at Brook and turn left
*Continue on Brook several blocks to a traffic light at Brook and Waterman
*The CIT – a large red and tan brick building – is on the right at the intersection; the entrance is on the other side, facing the quadrangle. *Event registration is on the third floor.

PARKING
Brown has a Visitor Parking Lot across the street from the CIT on Brook Street; this lot charges an hourly fee. You may get your parking ticket validated by the Department receptionist on the fourth floor to get a lower parking rate. On-street parking can also be found in the vicinity.

The primary goals of the Industrial Partners Program (IPP) are to exceed the expectations of our partner companies in terms of recruiting and outreach; to allow our faculty to engage in challenging and meaningful research collaborations and to provide resources and employment opportunities for our students. The Department wishes to thank our industrial partners:

Premier Partners
Adobe
Network Appliance
Sun Microsystems

Affiliates
Apple
Data Domain
Facebook
Google
GTECH
Microsoft
Oracle
VMware

Small Business Supporters
Vertica Systems

Individuals
Jim Baker, Zyasoft
Paul Edelman, Edelman & Associates
Robert Khoury, Worldwide Financial Industry Recruiting Services

To learn more about the Industrial Partners Program, contact:
Ugur Cetintemel, Faculty Director
Telephone: 401-863-7600
ipp@cs.brown.edu

Amy Tarbox, Program Manager
Telephone: 401-863-7610
abt@cs.brown.edu

Monday, September 22, 2008
12:00 PM – 6:00 PM
Room 368
Watson Center for
Information Technology

TECHNOLOGY SHOWCASE

BROWN UNIVERSITY
DEPARTMENT OF COMPUTER SCIENCE
INDUSTRIAL PARTNERS PROGRAM
41st BIANNUAL SYMPOSIUM

STAN ZDONIK
Professor of Computer Science

Special-Purpose Data Management

In this talk, we will discuss evidence that the era of a single monolithic solution to the world's data management needs is over. A single architecture cannot deliver the high-performance of specialized approaches. Over the last five years, we have been engaged in several efforts to build special-purpose platforms that can more precisely address diverse modern workloads. In this talk, we will describe a couple of these systems. We will also show that in order to achieve the best performance from these systems, a workload-specific physical design is necessary. Given the complexity of such a physical design, it is more and more difficult for a human DBA to produce it. For this reason, we will pay special attention to the problem of automatic physical design in each setting and will argue that there are plenty of interesting new research questions lurking there.
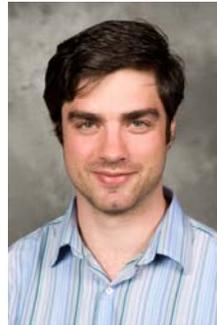
JOHN JANNOTTI
Assistant Professor of Computer Science

Black-box Tracing and Safe Parallelism: Tools for a Concurrent World

After many years of predictions, developers must design for concurrency. Nearly all general purpose computers sold today are multi-core, and many applications are deployed as services running on clusters of cooperating computers. We are developing two approaches to help developers keep pace with these changes.

First, we have created BorderPatrol to extract causal request traces from heterogeneous concurrent systems. BorderPatrol monitors message passing between unmodified applications in order to aid development and debugging by producing a "distributed stack trace." We have used BorderPatrol to trace a litany of applications - apache, thttpd, PostgreSQL, TurboGears, BIND and notably Zeus, a closed-source event-driven web server. BorderPatrol obtains precise traces for black-box systems that cannot be traced by any other technique.

While BorderPatrol aids in understanding and debugging existing systems, we are also developing Elyze to aid in the creation of correct concurrent applications in the first place. Elyze uses a conservative static analysis to determine when code segments may safely run in parallel, and a custom runtime scheduler that respects these constraints. The aim is to produce applications that are safe by default. Elyze currently analyzes event-driven servers written in C. For example, we have analyzed thttpd to extract previously unavailable parallelism. We hope to generalize the approach to threaded systems.

PASCAL VAN HENTENRYCK
Professor of Computer Science

Optimization Meets Telecommunications: A Marriage Made in Heaven

Progress in telecommunication technologies (high-speed networks, GPS, RFIDs, sensors,) is creating new challenges and opportunities in optimization. It is no longer sufficient to focus on strategic planning; optimization systems must now take operational decisions quickly and under uncertainty.

This talk illustrates this paradigmatic change in a variety of application areas, presents the technology enablers, and some preliminary results illustrating the potential benefits.