ICL NEWSLETTER

MAY 2009

Report on 1st Annual IESP Workshop

Held in Santa Fe, New Mexico April 7-8, this inaugural workshop was attended by more than 70 representatives from academia, government, and private industry. Two breakout groups were formed at the workshop. One group surveyed the current technical landscape of peta/exascale computing that the IESP plan needs to address while the other group explored potential organizational issues and opportunities that the IESP should consider in developing a model for international collaboration to create a common peta/exascale software stack. For more information about the workshop, including the agenda, the list of attendees and summaries of the two breakout groups, visit the **IESP website**. Dan Reed, who attended the IESP workshop, followed up the meeting with a **blog entry on Communications of the ACM discussing the future of exascale computing**.

ICL to Host Workshop on Scheduling for Large-scale Systems

An invitation-only workshop will be held at ICL May 13-15 to focus on scheduling and algorithms for large-scale systems. This three day workshop, the fourth in a series that began in 2004, will include more than 20 talks by distinguished researchers from the US and Europe with sessions to include discussions about multicore algorithms and stochastic models. For more information, visit the **workshop website**.

SOFTWARE RELEASES

Linear Algebra Survey Updated

The survey matrix of freely available software for the solution of linear algebra problems has been updated. See the **survey website** for new entries.

LAPACK 3.2.1 Released

Primarily a bug fix release, 3.2.1 also updates documentation and certain routines. See the links on the **LAPACK Forum website** for bug fix details and to download the latest package.

RECENT CONFERENCES

APRIL 7-8 Santa Fe, NM
International Exascale Software Project
Jack, Terry, Tracy

APRIL 4-6 Chicago, IL
MPI Forum and STCI Meeting
George, Thomas

APRIL 13-16 ORNL
NCCS/NICS 2009 Cray XT5 Quad-core Workshop Presentations online

Dan

UPCOMING CONFERENCES

MAY 3-8 Dagstuhl, Germany
Dagstuhl-Seminar "Fault Tolerance in High-Performance Computing and Grids"
George, Thomas

MAY 4-7 Atlanta, GA
Cray Users' Group Meeting
Stan

INTERVIEW

Anthony Danalis
Senior Research Associate

Tell us a little about yourself. Where are you from and how did you end up here at ICL?

I am originally from Greece. While in Greece, I lived almost a third of the time in each of three locations. The first place was Athens. The second place was Chalkis, a small town 50 miles outside Athens. And the third place was Crete, an island far away from Athens. I went to school at the University of Crete, where I studied Physics as an undergraduate and then did an MS in Computer Science. Early in my undergraduate program I realized that I'd rather study Computer Science, but in Greece you cannot change majors after you join the university. So I went on with the Physics degree, and took many computer science classes for my own enjoyment. In one of them, parallel programming, I heard of ICL and Jack Dongarra for the first time. The professor, E. Markatos, who became my MS advisor later on, was a big fan of ICL. Imagine his surprise when I emailed him that I joined ICL!

After graduating I went to the University of Delaware for my PhD. There I was co-advised by Martin Swany and Lori Pollock, since they are experts in HPC and Compilers respectively and my topic bridges the two worlds. Martin was very enthusiastic about ICL. He worked here as a Master's student and found it very enjoyable. Now I know why. When I started looking for a job, ICL was the one and only place he recommended. I also knew of several people and their work that were, or had been, at ICL (like Phil Mucci, Clint Whaley, George Bosilca) before I joined, so it didn't take much thought for me to want to come here.

What are some of the things you're working on with the group?

The project that I will be mainly working on is called Blackjack. It is a compiler evaluation project for a set of compilers that ... do not exist yet!! It is a DARPA project that includes several teams; some to work on developing architecture aware compilers; some to work on benchmarks and the evaluation of the compilers that will be built. Since this project is just now starting, I have been working with the OpenMPI group on a MPI to MPI+Threads conversion system. The idea here is to use compiler technology to (semi)automatically transform a program that uses N MPI tasks to a program that uses M MPI tasks and N/M threads per task.

What has the adjustment been like moving here from Delaware?

It has been very easy. The work environment is great, and the people are so friendly that there was nothing really to adjust to. It already feels like home.

I also like the area. The truth is I haven't had time yet to explore much. But I'm an outdoorsy person, so Tennessee seems like the right place to be. I also spent the summer of 2006 here, doing an internship at ORNL and I knew that I liked the area. Being Greek, 100 degrees Fahrenheit doesn't sound too hot to me. I also like the fact that Knoxville is a larger city, as opposed to Newark, DE, which is similar to the size of Oak Ridge. The one down-side is the airport. Being 40 minutes away from Philadelphia International all these years spoiled me a bit.

What are your interests/hobbies outside of work?

I like hiking, camping, and anything that involves nature and the outdoors. I also like playing ultimate frisbee and I used to play squash. Also, I like the word "make" a lot. I like making stuff myself, anything from furniture to wine to home grown vegetables (and of course the Greek salads you can make with these vegetables).

What do you see yourself doing 10 years from now?

If my original plan pans out, by then I will have taken over the world. On a more serious note, working in industry does not interest me as much as doing research and teaching. That means that I see myself being either a researcher at a research lab, or a professor at a research school, where I can do research and teach too.

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PEOPLE

Former ICLers meet former ICLers

Former ICLer ('03-'06) Julien Langou and his wife Julie (a current ICLer), who now reside in Denver, Colorado, visited Japan last month and caught up with some ICL alumni. From March 20th to April 3rd, the Langous visited Kyoto and Tokyo where they met with Hidehiko Hasegawa ('95-'96), Satomi Hasegawa ('96), Daisuke Takahashi ('02) and Tomo Hiroyasu ('02-'03). The two week trip included six talks at four different universities (Nagoya, Kyoto, Tokyo and Tsukuba), with some touring and judo activities thrown in. Julien and Julie report that it was difficult to leave since they have completely fallen in love with Japan.

Kyoto
Hidehiko, Julie and Tomo are looking for a restaurant.

Tokyo
Dinner after the Tokyo University seminar.

Julien is taking a class by Hidehiko about Sake.
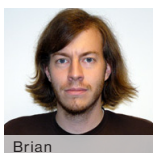
Tsukuba
Dinner with Hidehiko's students.

Hidehiko brings Julie to Judo!

Departures

Barry Britt has left the group to take a new position with Iowa State University in Ames, Iowa. Best of luck, Barry!

Barry

Arrivals

Brian Zachary has been hired to replace Barry in the ICL-Help group. Welcome to the group, Brian!

Brian

Visitors

Julien will be visiting the group from May 13th through the end of the month. Matthew Nabity, one of Julien's students, will be making a return visit.

Julien

Matthew

RECENT LUNCH TALKS
APRIL 3 Dr. Itamar Arel from EECS
A Novel Approach to Solving Large-Scale Linear Algebra PDF

APRIL 10 Holiday

APRIL 17 Anthony Danalis
MPI-aware Compiler Optimizations PDF

APRIL 24 Haihang
Adaptive Discontinuous Galerkin Finite Element Method PDF

MAY 1 Bilel
On a Tiled Implementation of the Communication Avoiding QRFactorization PDF

UPCOMING LUNCH TALKS
MAY 8 Piotr

MAY 15 No Lunch Talk

MAY 22 George

MAY 29
Cynthia Peterson, Professor, UT BCMB Dept.

REMINDERS
MAY 25 Holiday (UT Closed)

Book Review: Parallel Algorithms

Former ICLer Henri Casanova and regular ICL visitor and collaborator Yves Robert have co-authored a book on parallel computing titled **Parallel Algorithms**. Visit **HPCwire to read a review**.