ICL UT NEWSLETTER

AUGUST 2009

2009 ICL Retreat

This year's retreat will once again be at the Highland Manor Inn in Townsend, August 17-18. If you have not responded to Leighanne's e-mail about meals, etc. please do so ASAP. The retreat agenda will be forthcoming and, as usual, attendance is mandatory for current ICLers.

2nd IESP Workshop

IESP Paris Workshop participants

The 2nd of three planned invitation-only workshops for the International Exascale Software Project (IESP) was held June 28th and 29th in Paris, France. Tasked with developing a draft IESP roadmap for future exascale software, four groups were formed at this workshop to address the following four areas:

- Technical challenges and needs of academic and industrial software infrastructure research and development
- Computational challenges and needs for academic and industrial application communities
- Economic and management challenges and needs of computational resource providers and vendors
- Role and participation of national and international funding agencies

For more information about the meeting and to view all the presentations, visit the **IESP website**. The third and final workshop is scheduled for October 18-20, 2009 in Tsukuba, Japan.

RECENT PAPERS

Alam, S. R., Barrett, R. F., Jagode, H., Kuehn, J. A., Poole, S. W. and Sankaran, R. "**Impact of Quad-core Cray XT4 System and Software Stack on Scientific Computation**," Euro-Par 2009 (accepted), Delft, the Netherlands, 2009. PDF

Bosilca, G., Coti, C., Herault, T., Lemarinier, P., Dongarra, J. "**Constructing resiliant communication infrastructure for runtime environments**," Innovative Computing Laboratory Technical Report, ICL-UT-09-02, July 31, 2009. PDF

Baboulin, M., Dongarra, J., Gratton, S., Langou, J. "**Computing the Conditioning of the Components of a Linear Least-squares Solution**," Numerical Linear Algebra with Applications Vol. 16, No. 7, pp. 517-533, 2009. PDF

Dongarra, J., Beckman, P., Aerts, P., Cappello, F., Lippert, T., Matsuoka, S., Messina, P., Moore, T., Stevens, R., Trefethen, A., Valero, M. "**The International Exascale Software Project: A Call to Cooperative Action by the Global High Performance Community**," International Journal of High Performance Computing Applications, (to appear) PDF

Song, F., Moore, S., Dongarra, J. "**Analytical Modeling and Optimization for Affinity Based Thread Scheduling on Multicore Systems**," IEEE Cluster 2009, New Orleans, Aug. 31 - Sept. 4, 2009. PDF

RECENT CONFERENCES

JULY 27-29
MPI Forum
George, Thomas

UPCOMING CONFERENCES

AUG 31-SEP 4 New Orleans
IEEE Cluster Conference
Aurelien, Fengguang PDF

AUG 3 - 5 Athens, GA
IMACS
Jack

INTERVIEW

George Bosilca

Research Asst. Professor

Tell us a little about yourself (where you're from, your educational background, etc.).

I'm a citizen of planet Earth, mostly from the northern hemisphere. I was born a while back in Romania, moved to France at 18 and finally settled in the green Appalachian land of Tennessee. As a result, I'm a pure blend of totally opposite living environments and educational systems: from the extremely communist environment of Romania (back then), to the openly socialist society of France and finally a lasting touch of capitalism. I did all my pre-university studies in Romania, moving to France to go to the Paris XI (Orsay) university. At one point, I had a short slip toward industry working on some startups (around 2001 of course), but then I realized that what I really wanted to do wasn't that. My motivation for studying got a big push after this experience, so once back to the university I went all the way to my PhD.

What made you want to get involved in high performance computing?

It's a long story, so I'll try to summarize it in few words. It was mainly by accident. I started my PhD on parallel computers architectures, with a focus on what at that time was called highly SMP. When my advisor took a position at a Canadian university, I had to choose between working remotely with him or making a change in my PhD topic. Since during my classes as a PhD student I was intrigued by the complexity of working on distributed environments, I chose the second option, moving upstream in the software stack. While I still feel nostalgic about the computer architecture aspects, the excitement of my day-to-day work in the field of HPC clearly makes any pain more than bearable.

Tell us about how you ended up at ICL? What made you want to come?

By the end of my PhD I was looking for a postdoc experience abroad. I ran into a job offer (related to Harness) on the ICL website. As most people in the CS field, I knew Jack from his work on some of the more interesting projects: math libraries, NetSolve, PAPI, and those more related to my field like PVM, including his involvement in the original version of the MPI standard. ICL looked like one of the best places to work, at least from the scientific point of view. I have to recognize that Knoxville (and Tennessee in general) was a little bit of concern, but I was curious to see what life is like here. Moreover, all French ICL alumni I knew were heartily suggesting that ICL is THE place to be, so my choice was pretty straightforward.

What do you enjoy doing when you're not working?

The frontier between work and fun is pretty blurry in the exciting ICL working environment. But as a very social and active being, I get my share of out-of-the-office time. I'm a very regular visitor of TRecs here on campus as well as the swimming pool. I also enjoy hiking and camping all around the TN, NC and KY state parks - a lot of outdoor activities in general. I was pretty addicted to white water sports a while ago, but unfortunately this has slipped off my tight schedule lately. Otherwise if I'm not working/playing with a computer, I use a pen and paper to design projects for our house and then some other bigger tools to implement them. I like to destroy and (usually) rebuild things, and so far I think I have been pretty successful at it, even if this activity is actually taking its share of my time. With whatever time is left I actively work on my guide to Knoxville bars, trying to find some of the more obscure/distinct ones.

If you weren't working at ICL or even working in HPC research, where would you like to be working and why?

If I had to choose I would, of course, try to fulfill my childhood dreams - a very challenging and unique kind of work, in a galaxy far away. Honestly, except exchanging my laptop for a light-saber and suddenly becoming Luke Skywalker, nothing matches the challenge and excitement of working at ICL.

SOFTWARE RELEASES

PLASMA

PLASMA 2.0 was released on July 4th. Many new features have been included in this version, such as Multiple Precision Support, LAPACK Interface and Native Interface, and LAPACK-Compliant Error Handling just to name a few. Visit the **PLASMA website** for more information about the new release.

scalasca

SCALASCA 1.2 was released on July 10th. Used to analyze the performance behavior of parallel applications and to identify opportunities for optimization, new features of the toolset include improved support for OpenMP & hybrid MPI/OpenMP codes, MPI File I/O analysis, PGI compilers, and Cray XT & NEC-SX. The new release also includes a new User Guide and numerous other bug fixes & improvements. Visit the **SCALASCA website** for more information and to download the software.

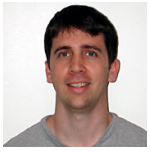
PEOPLE

On Friday, July 24th the five visiting students from Chicago made their presentations, which summarized the work they did during their summer internship at ICL. Thanks to everyone who worked with them and made them feel at home during their stay.

Students (L to R) Alex Hicks-Hardiman, Adriana Garties, Fernando Navarro, Ronald Tam, and Aral Johnson

Aurélie Hurault, an assistant professor from Institut National Polytechnique de Toulouse in France, will be visiting and working with Asim from August 1-October 24, 2009.

Len Freeman from the School of Computer Science and Deputy Director of Centre for Novel Computing at the University of Manchester will be visiting from August 9th-23rd.



Joe Thomas will be visiting this month to attend the retreat.

MORE UPCOMING CONFERENCES

AUG 10 - 12 Houston, TX
CScADS 2009, Workshop on Libraries and Autotuning for Petascale Applications
Emmanuel, Jack

AUG 20
HPCMP Utility Server Requirements Gathering Meeting
Dave C.

RECENT LUNCH TALKS

JULY 10 Tabitha Samuel
Performance Evaluation of the Matlab PCT for Parallel Implementations of Nonnegative Tensor Factorization PDF

JULY 17 Jeff Larkin
The Complete DumDum's Guide to Scaling to a BAJILLION Cores PDF

JULY 24
The visiting high school students from Chicago
Modeling Influenza in High School Networks PDF
PAPI Project PDF

JULY 31 Jakub
PLASMA 2.0: Status Update PDF

UPCOMING LUNCH TALKS

AUG 7 Pierre

AUG 14
David Keffer, associate professor in Chemical Engineering

AUG 21 Camille

AUG 28 TBA

DATES TO REMEMBER

AUG 17-18 ICL Retreat

AUG 19 Fall Semester classes begin

INNOVATIVE COMPUTING LABORATORY
THE UNIVERSITY of TENNESSEE

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Available on-line at: http://icl.cs.utk.edu/newsletter/2009/icl-news-2009-08.pdf
Comments and suggestions can be sent to: icl-news@cs.utk.edu