ICL NEWSLETTER

FEBRUARY 2010

ICL Celebrating 20 Years

As part of ICL's 20 year celebration, we will be hosting a workshop on March 26, 2010 here in Knoxville. This one day workshop will include various talks from present and former ICLers. All present and former ICLers are invited and we have reserved a block of rooms at a local hotel. For more information and to RSVP, visit the workshop website at **http://icl.eecs.utk.edu/20/**.

New UT Wireless Networks Available, *Nomad* to be Retired

Remember, the old SSID, called *nomad*, has been retired and was to stop functioning on Feb. 3rd. If you haven't updated your wireless settings, now is a good time to do so. The new open network SSID is *ut-open*. You can also use *ut-wpa2*, which replaces the old *nomadx* and *nomad-secure* networks. Visit **OIT's Helpdesk site** for more information.

PLASMA/MAGMA Presentation

If you weren't at SC '09 but wanted to catch Jack's talk on PLASMA/MAGMA you can find it here - **http://www.nvidia.com/content/GTC/videos/SC09_Dongarra.mp4**.

RELEASES

Component PAPI

Component PAPI has finally been released. Called PAPI-C or PAPI 4.0.0, this release has a goal of "...provid[ing] a stable technology platform within which to explore the development and implementation of additional components" and is backwards compatible with earlier versions of PAPI, including 3.7.2 (released in December) if you already have it installed. For more information about Component PAPI, visit the **release page**.

PAPI 3.7.2

Version 3.7.2 was released in December and contains a variety of updates to 3.7.1, including better auto-detection of new Linux kernels and updated cache tables. For more information, visit the **release page**.

RECENT PAPERS

Dongarra, J., Beckman, P. et al. **International Exascale Software Project Roadmap** University of Tennessee Computer Science Technical Report UT-CS-10-652, January 6, 2010. **PDF**

Agullo, E., Coti, C., Dongarra, J., Herault, T., Langou, J. **QR Factorization of Tall and Skinny Matrices in a Grid Computing Environment.** UT-CS-10-651 also Lawn 224, January 6, 2010. In the *Proceedings of IPDPS 2010: 24th IEEE International Parallel and Distributed Processing Symposium, Atlanta, GA, April 19-23, 2010.* **PDF**

Hadri, B., Ltaief, H., Agullo, E., Dongarra, J. **Tile QR Factorization with Parallel Panel Processing for Multicore Architectures**, In the *Proceedings of IPDPS 2010: 24th IEEE International Parallel and Distributed Processing Symposium, Atlanta, GA, Apr. 19-23, 2009.* **PDF**

Ltaief, H., Tomov, S., Nath, R., Du, P., Dongarra, J. **A Scalable High Performant Cholesky Factorization for Multicore with GPU Accelerators**, Innovative Computing Laboratory Technical Report ICL-UT-09-04 (also LAPACK Working Note 223 and CS Tech Report UT-CS-09-646), November 25, 2009. **PDF**

Tomov, S., Nath, R., Ltaief, H., Dongarra, J. **Dense Linear Algebra Solvers for Multicore with GPU Accelerators**, Accepted for publication at HIPS 2010, Atlanta, GA, January 15, 2010. **PDF**

Hadri, B., Ltaief, H., Agullo, E., Dongarra, J. **Enhancing Parallelism of Tile QR Factorization for Multicore Architectures**, Submitted to *Transaction on Parallel and Distributed Systems*, December, 2009. **PDF**

RECENT CONFERENCES

DEC 3-4 College Station, TX
GPU Computing Seminar / Stan
Invited talk at Texas A&M's Institute for Scientific Computation **PDF**

DEC 7-9 Oak Ridge, TN
Fall 2009 Cray XT5 Hex-core Workshop / Dan, Heike, Piotr

DEC 8-10 San Diego, CA
Architectures and Technology for Extreme Scale Computing / George

JAN 4-6 Houston, TX
AACE (Architecture Aware Compiler Environment) PI Meeting / Piotr, Anthony, Dave

JAN 5-7 Paris, France
STIC / Thomas

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INTERVIEW

Brian Zachary

IT Administrator I

Tell us a little about yourself, including where you're from, your education background, etc.

I was born in Knoxville and I've lived here ever since. I was first introduced to computers as a child at school and at my friends' houses, and when my family got our first computer when I was 10, it quickly became the focus of my attention. I decided that I wanted to study computer science the same day I heard about the field, when I was 13 or 14. I went on to double major in computer science and mathematics at UT while working part-time in Oak Ridge as a Windows administrator and desktop support staff. In 2006 I started working here with the CS (now EECS) departmental IT staff. This was my first introduction to administering Linux and Unix-based systems, which I found increasingly enjoyable the more I learned. Last spring I heard about the full-time opening in ICL, so I moved upstairs. I'm currently working on my PILOT (project in lieu of thesis) to finish my master's in computer science at UT.

What are your main responsibilities as one of ICL's systems administrators?

In summary, to meet the IT needs of any given ICL'er. That entails compiling and configuring applications and kernels, installing and configuring servers and desktop machines, and diagnosing and repairing both hardware and software problems in our infrastructure and desktop environments. If a user's hardware has a problem, I deal with the vendor to resolve the issue. If it's an ICL system, and it's not running properly or to a user's satisfaction, then it's my responsibility to address that problem.

Before joining the group you were a member of the EECS labstaff. What are some of the major differences between supporting our group versus supporting the department and what do you see as the main challenges of supporting our group?

I'd say that the largest difference between the department and ICL is that the department did not provide lunch once a week. I'm not sure how the department overlooked this crucial detail, but I'm glad ICL recognizes the importance of catered lunch talks.

Food aside, one of the biggest differences is the amount of desktop support required by the department. A lot of the work for the department was supporting professors' desktop and laptop machines, and even in a couple instances making house calls to fix a network issue at home. The department only had a couple of research clusters, but there was not the focus on deploying the latest hardware and software for the department like there is in ICL. In ICL, the main challenge is in keeping up with all of the infrastructure changes. It seems I am constantly compiling new kernels for new hardware and unboxing the next new machine for testing.

In a nutshell, the department had a stable infrastructure where most of the work was with users' machines whereas, in ICL, infrastructure requests are much more common than requests for desktop support.

What do you like to do when you're not working (e.g., hobbies, interests)?

I don't think I would be a proper ICL'er if I did not play with computers to some degree in my spare time. However, I'd go a bit crazy if that was all I did. I spent the majority of 2009 working on getting my private pilot's license, flying out of Knoxville Downtown Island Home airport (DKX). I'm not sure how much further I'd like to pursue aviation beyond a private license, but I've always had an interest in aircraft, and this last year has confirmed that flying is something I always want to be a part of my life, as long as finances allow.

I'm also an amateur musician, having played saxophone for 6 or 7 years (though that was 6 or 7 years ago) and some sort of guitar for the last 10. I mostly just play with friends, and at one point had a small home recording rig using my desktop at home, though at this point I only play around for fun on occasion. One of my new year's resolutions was to introduce more structure to my practice time, but so far that hasn't panned out.

Tell us something about yourself that might surprise someone?

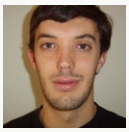
The first thing a lot of people ask when they find out my profession is whether I'm a Mac or PC guy. Ignoring the fact that Macs are, in fact, PCs, they are usually surprised to find out that I claim allegiance to no OS or tech company. I abuse them all liberally.

PEOPLE

ARRIVALS

Donnie Newell joined ICL Jan. 13 as a GRA. He'll be working with Piotr. Welcome Donnie!

Azzam Haidar joined the group Feb. 1st as a Post doc. He'll be working with the linear algebra crew. Welcome Azzam!



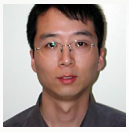
Mathieu Faverge joined the group on Feb. 1st as a Post doc and will be working with the linear algebra crew. Welcome Mathieu!

Vince Weaver joined the group on Feb. 1st as a Post doc and will be working with the group. Welcome Vince!

Krerkchai Kusolchu (Jom) joined the group on Jan. 1st as a non-UT student assistant. He'll be working with George. Welcome Jom!

Tilman Kustner, from Germany, will be visiting the group from Feb. 3rd until May 31st. Welcome to ICL, Tilman!

Our own **Josh Hoffman**, who recently received his undergraduate degree in CS, will be pursuing a Master's in CS and is now a GRA. Congratulations Josh!



Fengguang Song, who recently received his PhD after working in the group as a GRA for several years, has joined the ICL research staff as a Post doc.

Current ICLer **Julie Langou** graduated with an MBA from UC Denver in December. Congratulations Julie!

Pictured L-R: Julie, daughter Zoé, husband (and former ICLer) Julien, and son Léo.

DATES TO REMEMBER

FEB 4 UT vs. Arkansas (women's bskt.ball) 7:00

FEB 6 UT vs. South Carolina (men's bskt.ball) 6:00

FEB 14 Valentine's Day,
UT vs. Florida (women's bskt.ball) 2:00

FEB 17 UT vs. Georgia (men's bskt.ball) 8:00

FEB 22 UT vs. LSU (women's bskt.ball) 7:00

FEB 25 UT vs. Kentucky (women's bskt.ball) 7:00

FEB 27 UT vs. Kentucky (men's bskt.ball) 12:00pm

FEB 28 UT vs. Mississippi (women's bskt.ball) 6:00

JAN 19-21 Atlanta, GA
MPI Forum / George, Thomas

JAN 20-21 San Francisco, CA
Hybrid Multicore Consortium, First Annual Workshop / Hatem, Jakub

JAN 26 Oak Ridge, TN
FASTOS Meeting / George

JAN 27-29 Arlington, VA
SDCI/STCI as the Software Supply Chain of the National Cyberinfrastructure Workshop / David [PDF], Jack

UPCOMING CONFERENCES

FEB 4 Oak Ridge, TN
Scalable Tools Communication Infrastructure (STCI) / George

FEB 24 - 26 Seattle, WA
SIAM Conference on Parallel Processing and Scientific Computing (PP10) / Jakub, Stan

RECENT LUNCH TALKS

DEC 4 Philippe Hanset with UTK's OIT wireless group
eduroam: visitor access to academic networks across the globe PDF

DEC 11 Piotr
Of Cores, Threads, and Accelerators PDF

DEC 17 Jeff Larkin / **Cray Roadmap Update** (No Slides)

JAN 8 Stan / **MAGMA 0.2 and the road ahead** PDF

JAN 15 Guido Juckeland from ZIH Dresden
Performance Analysis for Hardware Accelerators beyond gettimeofday() PDF

JAN 22 Shirley / **PERI auto-tuning** PDF

JAN 29 John Drake from CSM/ORNL
Climate Mitigation: How much climate change can be avoided? (No Slides)

UPCOMING LUNCH TALKS

FEB 5 Anthony

FEB 12 Pragnesh Patel from Indiana University

FEB 19 Dzung Phan from University of Florida

FEB 26 Peng Du

INNOVATIVE COMPUTING LABORATORY
THE UNIVERSITY of TENNESSEE

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Available on-line at: **http://icl.cs.utk.edu/newsletter/**
Corrections, comments, and suggestions should be sent to: **icl-news@cs.utk.edu**