ICL NEWSLETTER

JUNE 2010

NSF to Require Data Management Plans

In an effort to more comprehensively manage data resulting from the increasingly data-driven science, NSF will soon require a data management plan in the form of supplementary proposal documentation. See **the NSF press release** for more information.

UT's McAfee Antivirus Software Contract Expires

UT's contract with McAfee for VirusScan Enterprise for Windows and Virex 8.6 for Mac expired on June 1st. This software will no longer be supported by the university. For more information about uninstalling the software and alternative antivirus applications, visit **OIT's antivirus website**.

June Top500 Published

The June 2010 Top500 list of the world's most powerful computer systems has been published. Below is the top 5. Visit the **Top500 website** to see the complete list.

	SITE	COMPUTER/YEAR VENDOR	CORES	R_{MAX}	R_{PEAK}
1	Oak Ridge National Laboratory United States	Jaguar - Cray XT5-HE Opteron Six Core 2.6 GHz / 2009 Cray Inc.	224162	1759.00	2331.00
2	National Supercomputing Centre in Shenzhen (NSCS) China	Nebulae - Dawning TC3600 Blade, Intel X5650, NVidia Tesla C2050 GPU / 2010 Dawning	120640	1271.00	2984.30
3	DOE/NNSA/LANL United States	Roadrunner - BladeCenter QS22/LS21 Cluster, PowerXCell 8i 3.2 Ghz / Opteron DC 1.8 GHz, Voltaire Infiniband / 2009 IBM	122400	1042.00	1375.78
4	National Institute for Computational Sciences/ University of Tennessee United States	Kraken XT5 - Cray XT5-HE Opteron Six Core 2.6 GHz / 2009 Cray Inc.	98928	831.70	1028.85
5	Forschungszentrum Juelich (FZJ) Germany	JUGENE - Blue Gene/P Solution / 2009 IBM	294912	825.50	1002.70

Linpack Goes Mobile

Want to see how the new Android mobile phones compare to yours in terms of performance measured in MFLOPS? Get more **information about the mobile Linpack application from the developer** or go **here to get the app**.

Dell's Performance Calculator

Want to calculate the performance of your HPC system and see where it would rank on November's Top500 list? **Check out Dell's HPC Performance Calculator**.

RECENT PAPERS

Gustavson, F., Wasniewski, J., Dongarra, J., Langou, J. **Rectangular Full Packed Format for Cholesky's Algorithm: Factorization, Solution, and Inversion** *ACM Transactions on Mathematical Software (TOMS)*, Volume 37, Issue 2 (April 2010). **URL**

Haidar, A., Ltaief, H., YarKhan, A., Dongarra, J. **Analysis of Dynamically Scheduled Tile Algorithms for Dense Linear Algebra on Multicore Architectures**, Submitted to the *First International Workshop on Parallel Software Tools and Tool Infrastructures (PSTI 2010)*, San Diego, CA, April 26, 2010. **PDF**

RECENT CONFERENCES

MAY 3-5 Chicago, IL
MPI Forum / George, Thomas

MAY 7 Paris, France
MIcrowave Data Analysis for petaScale computers (MIDAS) kickoff meeting / Thomas

MAY 30-JUN 3 Hamburg, Germany
International Supercomputing Conference (ISC'10) / Jack, Jakub, Heike

UPCOMING CONFERENCES

JUN 2-4 Aussois, French Alps
3rd 'Scheduling in Aussois' Workshop / George

JUN 6-9 Reykjavik, Iceland
Para 2010: State of the Art in Scientific and Parallel Computing / Jack, Shirley, George

JUN 12-13 Beijing, China
CUDA Center of Excellence 2010 / Hatem

JUN 14-16 San Jose, CA
MPI Forum - June 2010 / Thomas

JUN 21-25 Cosenza, Italy
HPC 2010 Advanced Workshop / George

JUN 22-JUN 25 Berkeley, CA
VECPAR / Hatem **PDF**

INTERVIEW

Sathish Vadhiyar
ICL 1999-2003

You were at ICL from 1999 - 2003. Where are you now, what are you doing, and how did you end up where you are?

I am an Assistant Professor in Supercomputer Education and Research Centre, Indian Institute of Science, Bangalore, India. My duties include predominantly research, teaching, and general faculty duties.

After obtaining my PhD in 2003 in CS at UT, I applied for several relevant jobs in India. I was offered this job even when I was in ICL. I took some time to mull over various options and eventually took this job in November 2003.

What all did you work on while at ICL?

I worked on mainly three research projects, namely, Net-Solve, Harness and GrADS. My PhD work was mostly related to the GrADS project, and hence spent most of my time there. My work at ICL was mainly on research and publishing, and participating in NetSolve software releases and project meetings.

How did working at ICL prepare you for teaching?

Hmm.., I am not too sure since my work at ICL was mainly on research. But I gave a good number of presentations on my research to ICLers and other research groups working in diverse areas. One of the lessons that the research meetings, presentations and interactions with other ICLers taught me was to convey complex ideas and techniques in simple ways that can be understandable and appreciated by the general audience. This definitely has played a big role in my teaching.

What are some of your favorite memories from ICL, UT, and the U.S.?

My favorite memories relate to the numerous opportunities that Dr. Dongarra provided me to travel to conferences and research groups for presentations and exchanges of research ideas. These allowed me to explore not only research but also different parts of the U.S. as well! The efficient but ever affable ICL office staff also made my ICL stay enjoyable. And of course, the freebies - ICL lunches (tofu and Steffanos in particular!), retreats and Jack's potluck get-togethers. Since most of my time at UT was confined to the department, I don't have any particular favorite memory of the university outside the department. I somehow didn't get caught up in the Vols and the orange hysteria (=

The U.S., being the melting pot of different cultures, had different restaurants dishing out different cuisines that I could savor. I also enjoyed the long drives that I took some times and the beautiful landscapes.

I am sure I am missing many here, but these are some of the things I could gather at this time.

Tell us briefly how higher education in India differs from the U.S.

The number of higher education schools providing graduate education is smaller than in U.S. But the high quality graduate programs follow more or less the same scheme as in U.S. One striking difference in Indian and U.S. education in general I observed is that while more importance is given in the U.S. to enjoy learning, the Indian system pushes for finishing different education milestones within time frames. Hence, it is a much more relaxed, enjoyable and probably efficient learning environment in the U.S., probably at the cost of delays - e.g., old people as students in class rooms, doing PhDs, etc. I have also observed that the U.S. graduate programs highly encourage the students to think really BIG (definitely at ICL!) due to large-scale funded projects and research, while Indian schools give importance (sometimes undue) to fundamentals. Also, there is very little industry interactions in higher education in India.

If you could give one piece of advice to graduate students coming from foreign countries to the U.S. to study, what would it be?

Adhere to U.S. education laws and principles, avoid shortcuts, look forward, and feel at home!

PEOPLE
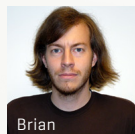
ICL student **Wes Alvaro** and **Brian Zachary** of the ICL-Help crew completed their MS degrees in computer science this semester. Congratulations Wes and Brian!
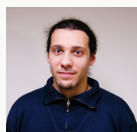
Current ICLer **Aurélien Bouteiller** and his wife Pauline welcomed the birth of their second son, Clément, on May 1st. Congratulations to the Bouteiller family!
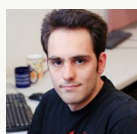
Welcome to **Vincent Berthoux**, a student visiting from France until September.
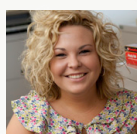
Anna Finchum, Teresa's daughter, is working for the group while on summer break from her studies at ETSU. Welcome Anna!

Summer Internships

The following students have departed for summer internships:

Wes Alvaro
intel

Wesley Bland
OAK RIDGE National Laboratory

Peng Du
Microsoft

Josh Hoffman
NICS

Donnie Newell
intel

Jack Wins Award

Jack received the **2010 Career Award in Supercomputing** from the SIAM Activity Group on Supercomputing (SIAG/SC) at the SIAM Conference on Parallel Processing for Scientific Computing. Congratulations Jack!

RECENT LUNCH TALKS

MAY 7 Hatem
Revisiting the Bulge Chasing Procedure for Two-Sided Transformations PDF

MAY 10 Dan
Component PAPI, Alphabet Soup, and the future of Performance Monitoring PDF

MAY 21 Piotr
How long will this HPL thing run? PDF

MAY 28 George
Distributed Dense Numerical Linear Algebra Algorithms on Massively Parallel Heterogeneous Architectures PDF

UPCOMING LUNCH TALKS

JUN 4 Stan

JUN 11 Azzam

JUN 18 TBA

JUN 25 Jakub

REMINDER

ICL Annual Retreat

The ICL Retreat will once again be held in Townsend at the Highland Manor Inn. However, the dates are different than in years past. It will be **Thursday and Friday, August 12-13**, which is the week before classes begin, so please mark your calendar.

RELEASES

IESP Roadmap Version 1.0

The **International Exascale Software Project (IESP)** has just released the **first version of its roadmap** for the development of software and algorithms on exascale systems.

Portable Hardware Locality (hwloc): Version 1.0

Version 1.0 of Open MPI's Portable Hardware Locality (hwloc) has been released.