

Editorial Notes

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Welcome to the May 2016 edition of the IEEE Distributed Processing Technical Committee's Newsletter. This volume includes a TC Announcement, interesting articles, job advertisements, upcoming conferences.

The IEEE Computer Society Technical Committee on Distributed Processing (TCDP) is the ideal and appropriate organization to:

- Foster and provide a fertile ground of our conferences.
- Provide a forum for discussing all activities related to distributed processing.
- Accept and publish through newsletters short articles from TCDP members.
- Announce job advertisements.
- Distribute to this community call for papers.
- Announce upcoming conferences.

1. TC Announcement

Stimuli for Conference Surplus Distribution Rule Changes

- Conference organizers complained that in many cases conference surplus mainly benefits CS and sponsoring TC, but not conference itself. Also, it was hard to qualify for conference surplus reinvestments. This often led to conference organizers acting financially irresponsible in order to produce little/no surplus.
- TC Chairs previously stated as challenges: "need continued funding for travel awards/educational activities", "need surplus rollover", "lack of sustainable base for initiatives" and "challenge to retain surplus rollover".
- New rules designed to address these challenges.

2016 is year when we are changing from "old" to "new" conference surplus distribution model, which affects TCs and conferences. Transition will take 2 years in order to not lose already "earned" benefits by conferences or TCs.

Rules for conference surplus distribution are changing considerably

- With more financial flexibility and greater surplus/deficit sharing between TCs and conferences comes greater TC Chair responsibility for their sponsored conferences
- Understanding the rules and advantages of producing bigger conference surpluses is key to conferences' and TC's health

New model removes qualification hurdles and shares surplus or loss 1/3 each between conference, TC and CS

- fair split of conference surpluses, i.e., bigger conference surpluses are not mainly absorbed by

TC or CS

- minimum surplus criteria for conference surplus reinvestments is being eliminated
- conference has 9 months (instead of previously 6 months) to close out conference financially (excludes closing steps that are not under the control of the conference); many conferences fell previously into the 6-9 months closing window
- TCs: qualifying criteria for budget reinvestments are being completely eliminated; TC will have continuous "reserves"

Advantages of producing bigger surpluses

- Conferences can more easily "balance" riskier locations, higher expense conference years (think conference anniversary celebrations, etc.), generic year-to-year fluctuations, etc., if conference produces bigger surplus and thus has bigger reinvestments
- Bigger conference surplus enables conference to more easily build up "bonus" funds for future year's conference, e.g., expansion of conference program by adding exhibitor displays, lecture series, etc.
- TCs frequently also contribute to conference activities out of their allocated portion of conference surplus, such as travel grants and awards programs
- Bigger conference surpluses support sponsoring TC activities and also the wide portfolio of CS products and services for members

Year-by-year changes: Conference reinvestments lag previous conference results by two years (to allow for financial closing of the conference and applying the funds to the next to-be-planned conference), but TCs will see the financial impact (in their "reserves") of their sponsored 2016 conferences immediately in 2016.

2016 conferences get reinvestments from 2014 conferences results under "old" rules

- 2014 conference must produce at least a \$5k surplus (after payment of admin fee)
- 2014 conference must close financially within 6 months
- reinvestment is 25% of the 2014 conference surplus

2017 conferences get reinvestments from 2015 conferences results under "old" rules

- 2015 conference must produce at least a \$5k surplus (after payment of admin fee)
- 2015 conference must close financially within 6 months
- reinvestment is 25% of the 2015 conference surplus

2018 conferences get reinvestments from 2016 conferences results under "new" rules

- reinvestment is 1/3 of conference surplus (sponsorship proportional) if conference closes financially within 9 months

TC reserves go up or down based on 2016 (and later) conference results

- 1/3 of conference surplus added to TC reserves (sponsorship proportional) if conference

closes financially within 9 months

- 1/3 of conference deficit added to TC reserves (sponsorship proportional)
- up to 1/3 of conference deficits (if conference produces loss even after using up conference reinvestment)

2. Interesting Papers/Articles

Dynamic and Fault-Tolerant Clustering for Scientific Workflows

<http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7096978>

AutoElastic: Automatic Resource Elasticity for High Performance Applications in the Cloud

<http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7090978>

A Chemistry-Inspired Workflow Management System for Decentralizing Workflow Execution

<http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6514026&url=http%3A%2F%2Fieeexplore.ieee.org%2Fstamp%2Fstamp.jsp%3Ftp%3D%26arnumber%3D6514026>

A Distributed and Scalable Approach to Semi-Intrusive Load Monitoring

http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7210212&filter%3DAND%28p_IS_Number%3A7469437%29

Developing Graph-Based Co-Scheduling Algorithms on Multicore Computers

http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7194818&filter%3DAND%28p_IS_Number%3A7469437%29

Graphine: Programming Graph-Parallel Computation of Large Natural Graphs for Multicore Clusters

http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7152922&filter%3DAND%28p_IS_Number%3A7469437%29

GPU-Accelerated Large-Scale Distributed Sorting Coping with Device Memory Capacity

http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7372425&filter%3DAND%28p_IS_Number%3A747394%29

Large-scale technique to produce quantum dots

<https://www.sciencedaily.com/releases/2016/05/160519161227.htm>

Complex inter-dependent data: Looking beyond conventional networks can lead to better predictions

<https://www.sciencedaily.com/releases/2016/05/160520142913.htm>

Computing a secret, unbreakable key

<https://www.sciencedaily.com/releases/2016/05/160523104817.htm>

New method points to compact, cheap and efficient sources of quantum information bits
<https://www.sciencedaily.com/releases/2016/05/160504084858.htm>

3. Job Advertisements

- Chinese Academy of Sciences, Shenzhen Institutes of Advanced Technology, Center for Cloud Computing Research is looking for postdoctoral research fellows with a strong background in one or more of the following disciplines: distributed systems, algorithms, machine learning, data mining, statistical analysis, networking systems, control systems. Contact: Nikos Tziritas, nikolaos@siat.ac.cn
- KTH Royal Institute of Technology strives to recruit twelve PhD students to work in cross-disciplinary projects motivated by the topic of the PhD program. Common for all positions is that the PhD student will interact with both an ICT group and an Electric Power Engineering group, with corresponding supervision. The new PhD program is a considerable investment, with the goal to create new synergies between the School's world class research in ICT and Electric Power Engineering, respectively. This will result in a unique research and education effort, where the graduated PhD's will be highly competitive on the – international job market. **Apply here:** <https://www.kth.se/en/ees/omskolan/ledigatjanster/jobba-pa-skolan-for-elektro-och-systemteknik-1.19114>
- The Robust Electromagnetic Field Testing and Simulation Lab in Oklahoma State University's School of Electrical and Computer Engineering is seeking a Postdoctoral Research Fellow to join its team. This position will involve working in an interdisciplinary team that is developing methods for the assessment of system level EMC to wireless networks, communication systems, and unmanned aircraft systems (UAS) and applying them in practice. Current projects involve UAS applications and the development of methods for application of absorbing materials in reducing emissions. **Apply here:** <https://okstate.csod.com/ats/careersite/JobDetails.aspx?id=1833>
- Florida International University seeks a research scientist to contribute to basic and applied research activities and may play a lead role. Performs tasks on their own initiative. May serve as Principal Investigator or Co-Principal investigator or work under the direction of a a principal investigator or program director and with minimal supervision. In addition to a firm background in the particular field, demonstrate the ability to assume leadership of small groups and work without additional supervision once objectives are defined and methods of approach are set. May supervise employees, non-exempt staff, or mentor students. Perform basic and applied research in area of considerable scope. Analyze and prepare results as directed. Design and develop robotic and mechatronic systems Direct efforts in the modeling and control of robotic systems Integrate sensors, actuators and real time control to mechatronic systems Conducts independent research within a specialized field. Supervises staff and/or mentors students. Present Research findings at the national and international levels. Publish in refereed journals, or independently within the scope of his/her responsibilities in the programs of

the principal investigator, in collaboration with the principal investigator. Develop and formulate original design of new processes to study research problems. Identify topics and collaborate with research groups across disciplines. Write Technical Reports. Provide assistance in area of expertise to specific contracts, proposals, and related documentation as directed. Organize and coordinate the experimental portions of funded research projects. Serve as a liaison with various agencies regarding research activities on contracts and grants. Write or aide in the submission of extramural proposals as needed. Assist staff and/or students working on projects and other duties as needed. Monitor and stay abreast on federal, state, local government, and commercial technical programs. Ensure compliance with all applicable and relevant regulatory guidelines. Coordinate activities, communications, and/or budgets for program(s) and technical projects. Perform other related duties as required or as directed. The omission of specific duties does not preclude the supervisor from assigning duties that are logically related to the position. **Apply here:** <http://hr.fiu.edu/pshr/index.php>

- The Fraunhofer Portugal Research Center seeks for a senior researcher that will be responsible for the technical and scientific leadership of a team of researchers working on one of the most prominent Research and Development projects executed by Fraunhofer Portugal in the context of ICT for Development. The results will be applied in the field, on environments of low or nonexistent communication networks in developing countries, specifically the CPLP. The successful candidate will have the responsibility to work on the development of a communications system for voice and data, alongside with a German Fraunhofer Institute and with companies that produce components of such system. Deployment, configuration and field testing will also be a part of the responsibilities. **Apply here:** http://www.fraunhofer.pt/en/fraunhofer_aicos/jobs_and_career/scientific_positions.html
- Postdoctoral Position in Parallel Scientific Computing Boise State University. The postdoctoral associate will join a team of faculty members and graduate students from mechanical engineering, computer science and applied mathematics. He/she is expected to work on design and implementation of an open-source MPI/OpenACC parallel complex geometry incompressible flow solver with a Cartesian adaptive mesh refinement capability. High performance computing facilities at the HiPerSimLab includes a 32-node CPU/GPU Linux cluster with a parallel file storage system. The Linux cluster also drives a wall-sized 8×5 tile display that is integrated into the research laboratory to support scientific visualization of large simulation data. HiPerSimLab leads the NVIDIA GPU Computing Research Center at Boise State University, and has been active in multi-GPU computing for fluid dynamics since 2007. For additional information, please contact Inanc Senocak, senocak@boisestate.edu.
- The Fraunhofer Portugal Research Center seeks for a senior researcher that will be responsible for the technical and scientific leadership of a team of researchers working on one of the most prominent Research and Development projects executed by Fraunhofer Portugal. The results, a mobile companion for seniors based on a smartphone, have been transferred to an industrial client which is in the process launching it into international markets, thus providing real user feedback to inspire new technical and scientific developments. **Apply here:** http://www.fraunhofer.pt/en/fraunhofer_aicos/jobs_and_career/scientific_positions.html

- Research Fellow Nanyang Technological University. Rolls-Royce@NTU Corporate Lab is currently looking for a candidate to join them as a Research Fellow. This role is to work on the development of marine electrical actuation for deck machinery crane/winch, rudder, and azimuth thruster. The drivetrain design, motor evaluations and motor drive control will be studied for different applications. The full electromechanical system will be verified in simulation and laboratory hardware prototype. Apply here: https://engineering.academickey.com/login.php?forward=seeker_stuff;apply-79168
- Research Scientist Florida International University. Job Summary: Contributes to basic and applied research activities and may play a lead role. Performs tasks on their own initiative. May serve as Principal Investigator or Co-Principal investigator or work under the direction of a principal investigator or program director and with minimal supervision. In addition to a firm background in the particular field, demonstrate the ability to assume leadership of small groups and work without additional supervision once objectives are defined and methods of approach are set. May supervise employees, non-exempt staff, or mentor students. Apply here: <http://hr.fiu.edu/pshr/index.php>
- NSF-Sponsored Postdoc: Brain-Computer Interface, Machine Learning, Signal Processing AreteX Systems, Inc. AreteX Systems, a medical technology startup company accelerating the use of information technology in healthcare, has an immediate opening for a Research Engineer/Scientist in its office located in New York City, SoHo district. AreteX Systems has an immediate opening for a NSF-sponsored postdoctoral fellow position with an annual salary of \$75k. The position involves developing signal processing algorithms for innovative biomedical technologies involving physiological signals. We are looking for a self-motivated, highly talented individual with an excellent background in signal processing, machine learning, and brain-computer interface. The successful candidate will work closely with a team of physicians, nurses, engineers, and scientists in designing new clinical decision support systems. Apply here: [http://engineering.academickey.com/seeker_job_display.php?dothis=display&job\[IDX\]=76364-EN160427w-8e&oid=515649](http://engineering.academickey.com/seeker_job_display.php?dothis=display&job[IDX]=76364-EN160427w-8e&oid=515649)

TCDP members are welcome to suggest new job advertisements that can be included in our future newsletters. You can send any job advertisement to Dr. Nikos Tziritas, nikolaos@siat.ac.cn.

4. Upcoming Conferences

4.1 Call for papers

IEEE Big Data

Paper submission: July 25, 2016

Notification due: October 9, 2016

Conference Dates: Dec 5-8, 2016

<http://cci.drexel.edu/bigdata/bigdata2016/index.html>

HPCA

Abstract submission: July 25, 2016
Paper submission: August 1, 2016
Notification due: October 12, 2016
Conference Dates: February 4-8, 2016
<http://h pca2017.org/>

POPL

Abstract registration: July 1, 2016
Paper submission: July 6, 2016
Notification due: October 3, 2016
Conference Dates: Jan 18-20, 2016
<http://conf.researchr.org/home/POPL-2017>

INFOCOM

Abstract registration: July 22, 2016
Paper submission: July 29, 2016
Notification due: November 25, 2016
Conference Dates: May 1-4, 2017
<http://infocom2017.ieee-infocom.org/authors/call-for-papers>

NSDI

Abstract registration: September 14, 2016
Paper submission: September 2, 2016
Notification due: December 5, 2016
Conference Dates: March 27-29, 2017
<https://www.usenix.org/conference/nsdi17/call-for-papers>

PPoPP

Paper submission: August 1, 2016
Notification due: November 12, 2016
Conference Dates: February 4-8, 2017
<http://conf.researchr.org/home/PPoPP-2017>

GREENCOM

Paper submission: August 31, 2016
Notification due: September 30, 2016
Conference Dates: December 15-18, 2016
<http://infocom2017.ieee-infocom.org/authors/call-for-papers>

4.2 Call for participation

ICDCS

Conference Dates: June 27 - 30, 2016

Place: Nara, Japan

<http://www-higashi.ist.osaka-u.ac.jp/icdcs2016/>

Euro-Par

Conference Dates: August 22 - 26, 2016

Place: Grenoble, France

<https://europar2016.inria.fr/>

PODC

Conference Dates: July 25-28, 2015

Place: Chicago, USA

<http://www.podc.org>

ICS

Conference Dates: May 30- June 2, 2016

Place: Istanbul, Turkey

<http://ics16.bilkent.edu.tr/index.htm>

HPDC

Conference Dates: May 31- June 4, 2016

Place: Kyoto, Japan

<http://www.hfdc.org/2016/>

ICCS

Conference Dates: June 6- 8, 2016

Place: San Diego, USA

<http://www.iccs-meeting.org/iccs2016/>

SIGCOMM

Conference Dates: August 22- 26, 2016

Place: Salvador, Brazil

<http://conferences.sigcomm.org/sigcomm/2016/>

SEC (The First IEEE/ACM Symposium on Edge Computing)

Conference Dates: October 27-28, 2016

Place: Washington DC, USA

<http://conferences.computer.org/sec/>

ICPP

Conference Dates: August 16 - 19, 2016

Place: Philadelphia, USA

<http://icpp2016.cs.wcupa.edu/>

FM

Conference Dates: November 7-11, 2016

Place: Limassol, Cyprus

<http://fm2016.cs.ucy.ac.cy/>

MASCOTS

Conference Dates: September 21- 23, 2016

Place: London, UK

<http://san.ee.ic.ac.uk/mascots2016/>

OSDI

Conference Dates: November 2- 4, 2016

Place: Savannah, Georgia

<https://www.usenix.org/conference/osdi16/call-for-papers>