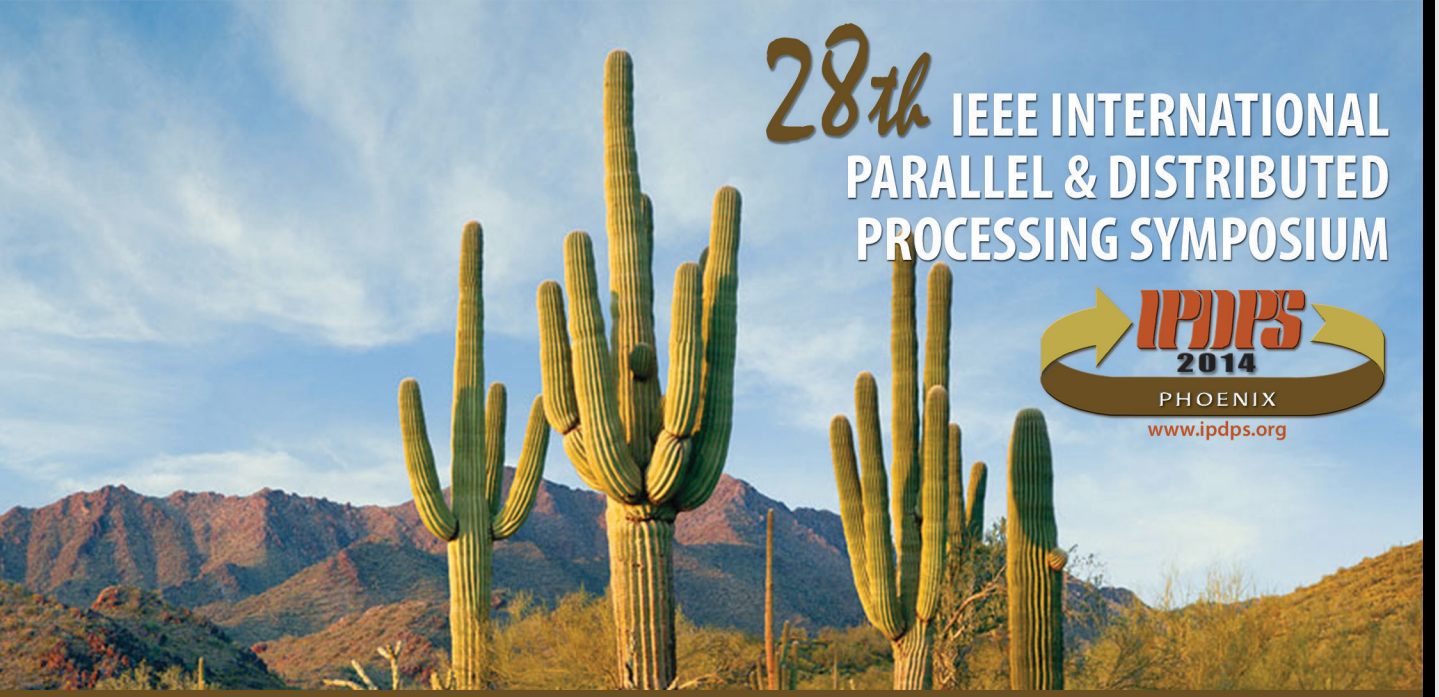

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  Bernhard Schmidt, Daniel Ziener, and Jürgen Teich
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- Limited Time and Experience: Parallelism in CS1
  Steven A. Bogaerts
- NSF/IEEE-TCPP Curriculum Implementation at the State University of Nizhni Novgorod
  Viktor Gergel, Alexey Liniov, Iosif Meyerov, and Alexander Sysoyev
- Parallel and Distributed Computing across the Computer Science Curriculum
  David J. John and Stan J. Thomas

Papers by Session

EduPar Session: Software Engineering Courses

- Service-Oriented Computing and Software Integration in Computing Curriculum
  Yinong Chen and Zhizheng Zhou
- EA: Research-Infused Teaching of Parallel Programming Concepts for Undergraduate Software Engineering Students
  Nasser Giacaman and Oliver Sinnen
- Using Patterns to Teach Parallel Computing
  Clayton Ferner, Barry Wilkinson, and Barbara Heath

Papers by Session

EduPar Session: Miscellaneous

- Teaching HDFS/MapReduce Systems Concepts to Undergraduates
  Linh Bao Ngo, Edward B. Duffy, and Amy W. Apon
- Interactively Exploring the Connection between Nested Dissection Orderings for Parallel Cholesky Factorization and Vertex Separators
  H. Martin Bücker and M. Ali Rostami
- A Portable Cluster for Each Student
  David Toth

Papers by Session

Workshop 12: GABB — Graph Algorithms Building Blocks

- GABB Introduction
  Tim Mattson, David A. Bader, Aydın Buluç, John Gilbert, Joseph Gonzalez, and Jeremy Kepner

Papers by Session

Workshop 13: PDSEC — Workshop on Parallel and Distributed Scientific and Engineering Computing

- PDSEC Introduction and Committees
  Peter Strazdins, Raphaël Couturier, Michelle Mills Strout, Keita Teranishi, Thomas Rauber, Gudula Rünger, and Laurence T. Yang

Papers by Session

PDSEC Session 1: Best Papers

- llamaOS: A Solution for Virtualized High-Performance Computing Clusters
  William A. Magato and Philip A. Wilsey
- New Algorithm for Computing Eigenvectors of the Symmetric Eigenvalue Problem
  Azzam Haidar, Piotr Luszczek, and Jack Dongarra

Papers by Session

PDSEC Session 2: Algorithms (I)

- Exhaustive Key Search on Clusters of GPUs
  Davide Barbieri, Valeria Cardellini, and Salvatore Filippone
- Application Level Fault Recovery: Using Fault-Tolerant Open MPI in a PDE Solver
  Md Mohsin Ali, James Southern, Peter Strazdins, and Brendan Harding
- Nanoscale Cluster Detection in Massive Atom Probe Tomography Data
  Sudip K. Seal, Srikanth B. Yoginath, and Michael K. Miller
- Construction of Porous Networks Subjected to Geometric Restrictions by Using OpenMP
  Angel González Méndez, Graciela Román Alonso, Fernando Rojas González, Miguel Alfonso Castro García, Miguel Aguilar Cornejo, and Salomón Cordero Sánchez

Papers by Session

PDSEC Session 3: Systems and Performance Analysis

- Integration and Evaluation of Decentralized Fairshare Prioritization (Aequus)
  Daniel Espling, Per-Olov Östberg, and Erik Elmroth
- Coordination Languages and MPI Perturbation Theory: The FOX Tuple Space Framework for Resilience
  Jeremiah J. Wilke
- DisSLib: CC: A Library for Distributed Search with a Central Common Search State
  Tyson Kendon and Jörg Denzinger
- Improving I/O Performance with Adaptive Data Compression for Big Data Applications
  Hongbo Zou, Yongen Yu, Wei Tang, and Hsuanwei Michelle Chen
- Analysis of MPI Shared-Memory Communication Performance from a Cache Coherence Perspective
  Bertrand Putigny, Benoit Ruelle, and Brice Goglin

Papers by Session

PDSEC Session 4: Algorithms (II)

- Acceleration of GPU-Based Ultrasound Simulation via Data Compression
  Andrew A. Haigh and Eric C. McCreath
- Kd-Tree Based N-Body Simulations with Volume-Mass Heuristic on the GPU
  Klaus Kofler, Dominik Steinhauser, Biagio Cosenza, Ivan Grasso, Sabine Schindler, and Thomas Fahringer
- Nuclear Fusion Simulation Code Optimization and Performance Evaluation on GPU Cluster
  Norihisa Fujita, Hideo Nuga, Taisuke Boku, and Yasuhiro Idomura
- Acceleration of a Python-Based Tsunami Modelling Application via CUDA and OpenHMPP
  Zhe Weng and Peter E. Strazdins
- GPU Enhanced Path Finding for an Unmanned Aerial Vehicle
  Roksana Hossain, Sebastian Magierowski, and Geoffery G. Messier

Papers by Session

Workshop 14: DPDNS — Dependable Parallel, Distributed, and Network-Centric Systems

- DPDNS Introduction and Committees
  Dimiter Avresky, Erik Maehle, and Salvatore Distefano
- DPDNS Keynote
  Edgar Nett

Papers by Session

DPDNS Session: Applications

- Maintaining Dependable Communication Service for Mobile Stations in Wireless Mesh Networks by Tracking Capacity Demands
  Timo Lindhorst, Burkhard Weseloh, and Edgar Nett
- A Load Balancing Behavior for Underwater Robot Swarms to Increase Mission Time and Fault Tolerance
  Ammar Amory, Thomas Tosik, and Erik Maehle
- ExCovery — A Framework for Distributed System Experiments and a Case Study of Service Discovery
  Andreas Dittrich, Stefan Wanja, and Miroslaw Malek
- Managing Soft-Errors in Transactional Systems
  Mohamed Mohamedin, Roberto Palmieri, and Binoy Ravindran

Papers by Session

DPDNS Session: Theoretical Aspects

- Standby System Reliability through DRBD
  Salvatore Distefano
- Trust-Based Security for the Spanning Tree Protocol
  Yingxu Lai, Qiuyue Pan, Zenghui Liu, Yinong Chen, and Zhizheng Zhou
- Autonomy Requirements Engineering for Self-Adaptive Science Clouds
  Emil Vassev and Mike Hinchey

Papers by Session

Workshop 15: MTAAP — Workshop on Multi-threaded Architectures and Applications

- MTAAP Introduction and Committees
  Luiz DeRose

Papers by Session

MTAAP Session: Algorithms and Position Papers

- A New Parallel Algorithm for Two-Pass Connected Component Labeling
  Siddharth Gupta, Diana Palsetia, Md. Mostofa Ali Patwary, Ankit Agrawal, and Alok Choudhary
- Position Paper: Locality-Driven Scheduling of Tasks for Data-Dependent Multithreading
  Jaime Arteaga, Stephane Zuckerman, Elkin Garcia, and Guang Gao
- Position Paper: Leveraging Strength-Based Dynamic Slicing to Identify Control Reconvergence Instructions
  Walid J. Ghandour and Nadine J. Ghandour

Papers by Session

MTAAP Session: Graph Analytics

- Parallel Heuristics for Scalable Community Detection
  Hao Lu, Mahantesh Halappanavar, Ananth Kalyanaraman, and Sutanay Choudhury
- Hardware/Software Vectorization for Closeness Centrality on Multi-/Many-Core Architectures
  Ahmet Erdem Sariyuce, Erik Saule, Kamer Kaya, and Ümit V. Çatalyürek
- Revisiting Edge and Node Parallelism for Dynamic GPU Graph Analytics
  Adam McLaughlin and David A. Bader

Papers by Session

MTAAP Session: Accelerators

- A Validation Testsuite for OpenACC 1.0
  Cheng Wang, Rengan Xu, Sunita Chandrasekaran, Barbara Chapman, and Oscar Hernandez
- Extracting Maximal Exact Matches on GPU
  Anas Abu-Doleh, Kamer Kaya, Mohamed Abouelhoda, and Ümit V. Çatalyürek
- Predicting an Optimal Sparse Matrix Format for SpMV Computation on GPU
  B. Neelima, G. Ram Mohana Reddy, and Prakash S. Raghavendra

Papers by Session

Workshop 16: LSPP — Workshop on Large-Scale Parallel Processing

- LSPP Introduction and Committees
  Darren J. Kerbyson, Ram Rajamony, and Charles Weems

Papers by Session

LSPP Session 1: Performance Analysis and Optimization

- Higher Dimensional Gaussian Networks
  Arash Shamaei, Bella Bose, and Mary Flahive

Papers by Session

LSPP Session 2: Modeling Performance for Scaling

- The Power-Performance Tradeoffs of the Intel Xeon Phi on HPC Applications
  Bo Li, Hung-Ching Chang, Shuaiwen Song, Chun-Yi Su, Timmy Meyer, John Mooring, and Kirk W. Cameron
- Performance Modeling for Hardware Thread-Level Speculation
  Ying-Chieh Wang, Che-Rung Lee, Yeh-Ching Chung, I-Hsin Chung, and Michael Perrone
- HMC-Sim: A Simulation Framework for Hybrid Memory Cube Devices
  John D. Leidel and Yong Chen

Papers by Session

LSPP Session 3: Large-Scale Systems

- Online Monitoring System for Performance Fault Detection
  Roberto Gioiosa, Gokcen Kestor, and Darren J. Kerbyson

Papers by Session

LSPP Session 4: Scheduling

- Towards Extreme-Scale Simulations with Next-Generation Trilinos: A Low Mach Fluid Application Case Study
  Paul Lin, Matthew Bettencourt, Stefan Domino, Travis Fisher, Mark Hoemmen, Jonathan Hu, Eric Phipps, Andrey Prokopenko, Sivasankaran Rajamanickam, Christopher Siefert, Eric Cyr, and Stephen Kennon
- Design and Implementation of a Large Scale Tree-Based QR Decomposition Using a 3D Virtual Systolic Array and a Lightweight Runtime
  Ichitaro Yamazaki, Jakub Kurzak, Piotr Luszczek, and Jack Dongarra
- SupMR: Circumventing Disk and Memory Bandwidth Bottlenecks for Scale-up MapReduce
  Michael Sevilla, Ike Nassi, Kleoni Ioannidou, Scott Brandt, and Carlos Maltzahn

Papers by Session

Workshop 17: PCO — Parallel Computing and Optimization

- PCO Introduction and Committees
  Didier El-Baz

Papers by Session

PCO Session 1: Optimization Techniques for Parallel or Distributed Architectures

- Towards Energy Efficient Allocation for Applications in Volunteer Cloud
  Congfeng Jiang, Jian Wan, Christophe Cérin, Paolo Gianessi, and Yanik Ngoko
- Fast Generation of Large Task Network Mappings
  Karl-Eduard Berger, François Galea, Bertrand Le Cun, and Renaud Sirdey

Papers by Session

PCO Session 2: Parallel Optimization Algorithms

- Adaptive N to P Portfolio for Solving Constraint Programming Problems on Top of the Parallel Bobpp Framework
  Tarek Menouer and Bertrand Le Cun
- Dependent Walks in Parallel Local Search
  Yves Caniou and Philippe Codognet
- A Parallel Large Neighborhood Search-Based Heuristic for the Disjunctively Constrained Knapsack Problem
  Mhand Hifi, Stephane Negre, Toufik Saadi, Sagvan Saleh, and Lei Wu
- Solving Hard MIPLIB2003 Problems with ParaSCIP on Supercomputers: An Update
  Yuji Shinano, Tobias Achterberg, Timo Berthold, Stefan Heinz, Thorsten Koch, and Michael Winkler

Papers by Session

PCO Session 3: Task Scheduling and Miscellaneous

- A Task Scheduling Algorithm Based on Replication for Maximizing Reliability on Heterogeneous Computing Systems
  Shuli Wang, Kenli Li, Jing Mei, Keqin Li, and Yan Wang
- SkewControl: Gini Out of the Bottle
  Si Zheng, Yunhuai Liu, Tian He, Li Shanshan, and Xiangke Liao
- The Heuristic Static Load-Balancing Algorithm Applied to the Community Earth System Model
  Yuri Alexeev, Sheri Mickelson, Sven Leyffer, Robert Jacob, and Anthony Craig
- A Distributed Algorithm for a Reconfigurable Modular Surface
  Didier El-Baz, Benoît Piranda, and Julien Bourgeois

Papers by Session

Workshop 18: ParLearning — Workshop on Parallel and Distributed Computing for Large Scale Machine Learning and Big Data Analytics

- ParLearning Introduction and Committees
  Abhinav Vishnu and Yinglong Xia
- ParLearning Keynote
  Eric P. Xing

Papers by Session

ParLearning Session 1

- Wait-Free Primitives for Initializing Bayesian Network Structure Learning on Multicore Processors
  Hsuan-Yi Chu, Yinglong Xia, Anand Panangadan, and Viktor K. Prasanna
- gpuRF and gpuERT: Efficient and Scalable GPU Algorithms for Decision Tree Ensembles
  Karl Jansson, Håkan Sundell, and Henrik Boström
- Training Large Scale Deep Neural Networks on the Intel Xeon Phi Many-Core Coprocessor
  Lei Jin, Zhaokang Wang, Rong Gu, Chunfeng Yuan, and Yihua Huang
- Parallel Bayesian Network Modelling for Pervasive Health Monitoring System
  Xiujuan Qian, Yongli Wang, and Xiaohui Jiang

Papers by Session

ParLearning Session 2

- Portfolio-Based Selection of Robust Dynamic Loop Scheduling Algorithms Using Machine Learning
  Nitin Sukhija, Brandon Malone, Srishti Srivastava, Ioana Banicescu, and Florina M. Ciorba
- A General P2P Scheme for Constructing Large-Scale Virtual Environments
  Wei Wang, Guisong Yang, Naixue Xiong, Xingyu He, and Wenzhong Guo

Papers by Session

ParLearning Session 3

- Large Scale Discriminative Metric Learning
  Peter D. Kirchner, Matthias Boehm, Berthold Reinwald, Daby Sow, Michael Schmidt, Deepak Turaga, and Alain Biem
- YAFIM: A Parallel Frequent Itemset Mining Algorithm with Spark
  Hongjian Qiu, Rong Gu, Chunfeng Yuan, and Yihua Huang
- The Empirical Research of Virtual Enterprise Knowledge Transfer's Effectiveness Faced to the Independent Innovation Ability
  Yang Bo, Naixue Xiong, and Wenzhong Guo
- A Distributed Speech Algorithm for Large Scale Data Communication Systems
  Naixue Xiong, Guoxiang Tong, Wenzhong Guo, Jian Tan, and Guanning Wu

Papers by Session

Workshop 19: HPDIC - High Performance Data Intensive Computing

- HPDIC Introduction and Committees
  Christophe Cerin and Cong-Feng Jiang

Papers by Session

HPDIC Session 1: Memory, I/O, and Performance Enhancement

- Compactor: Optimization Framework at Staging I/O Nodes
  Vishwanath Venkatesan, Mohamad Chaarawi, Quincey Koziol, and Edgar Gabriel
- Hybrid BFS Approach Using Semi-external Memory
  Keita Iwabuchi, Hitoshi Sato, Ryo Mizote, Yuichiro Yasui, Katsuki Fujisawa, and Satoshi Matsuoka
- Model-Driven Data Layout Selection for Improving Read Performance
  Jialin Liu, Surendra Byna, Bin Dong, Kesheng Wu, and Yong Chen

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HPDIC Session 2: Clustering, Data Management, and Applications

- Scalable and Reliable Data Broadcast with Kascade
  Stéphane Martin, Tomasz Buchert, Pierric Willemet, Olivier Richard, Emmanuel Jeanvoine, and Lucas Nussbaum
- SOM Clustering Using Spark-MapReduce
  Tugdual Sarazin, Hanane Azzag, and Mustapha Lebbah
- Optimizing the Join Operation on Hive to Accelerate Cross-Matching in Astronomy
  Liang Li, Dixin Tang, Taoying Liu, Hong Liu, Wei Li, and Chenzhou Cui

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Workshop 20: JSSPP — Workshop on Job Scheduling Strategies for Parallel Processing

- JSSPP Introduction and Committees
  Walfredo Cirne and Narayan Desai

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Workshop 21: CHIUW — Chapel Implementers and Users Workshop

- CHIUW Introduction and Committees
  Brad Chamberlain

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Bettencourt, Matthew

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