8th USENIX Symposium on Networked Systems Design and Implementation

March 30–April 1, 2011 • Boston, MA
Sponsored by USENIX in cooperation with ACM SIGCOMM and ACM SIGOPS

NSDI ’11 will focus on the design principles, implementation, and practical evaluation of large-scale networked and distributed systems in a 3-day technical program including topics such as:

- Data-intensive computing
- Energy and storage
- Debugging and correctness
- Security and privacy
- And more!

Take advantage of this opportunity to join researchers from across the networking and systems community in fostering a broad approach to addressing common research challenges.

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Don’t Miss the Co-located Workshops!

Both workshops will take place on March 29, 2011.

- 4th USENIX Workshop on Large-Scale Exploits and Emergent Threats (LEET ’11)
  www.usenix.org/leet11

- Workshop on Hot Topics in Management of Internet, Cloud, and Enterprise Networks and Services (Hot-ICE ’11)
  www.usenix.org/hotice11
Wednesday, March 30

8:45 a.m.–9:00 a.m.  Wednesday
Opening Remarks and Awards Presentation
NSDI ’11 Program Co-Chairs: David G. Andersen, Carnegie Mellon University; Sylvia Ratnasamy, Intel Labs Berkeley

9:00 a.m.–10:30 a.m.  Wednesday
Speed, Speed, and More Speed
SSLShader: Cheap SSL Acceleration with Commodity Processors
Keon Jang and Sangjin Han, KAIST; Seungyeop Han, University of Washington; Sue Moon and Kyeoungsoo Park, KAIST
ServerSwitch: A Programmable and High Performance Platform for Data Center Networks
Gouhan Lu, Chuanxiong Guo, Yulong Li, Zhiquang Zhou, Haitao Wu, Yongqiang Xiong, Tong Yuan, Rui Gao, and Yongguang Zhang, Microsoft Research Asia
TritonSort: A Balanced Large-Scale Sorting System
Alexander Rasmussen, George Porter, and Michael Conley, University of California, San Diego; Harsha V. Madhyastha, University of California, Riverside; Radhika Niranjan Mysore, University of California, San Diego; Alexander Puchet, Vienna University of Technology; Amin Vahdat, University of California, San Diego

10:30 a.m.–11:00 a.m.  Break

11:00 a.m.–noon  Wednesday
Performance Diagnosis
Diagnosing Performance Changes by Comparing System Behaviours
Profiling Network Performance for Multi-tier Data Center Applications
Minlan Yu, Princeton University; Albert Greenberg and Dave Maltz, Microsoft; Jennifer Rexford, Princeton University; Lihua Yuan, Srinikant Kandula, and Changhoon Kim, Microsoft

Noon–1:30 p.m.  Symposium Luncheon

1:30 p.m.–3:00 p.m.  Wednesday
Nothing but Net
Efficiently Measuring Bandwidth at All Time Scales
Frank Uyeda, University of California, San Diego; Luca Foschini and Subhash Suni, University of California, Santa Barbara; George Varghese, University of California, San Diego
ETTM: A Scalable Fault Tolerant Network Manager
Colin Dixon, Hardeep Uppal, Vjekoslav Brjakovic, Dave Brandon, Thomas Anderson, and Arvind Krishnamurthy, University of Washington
Design, Implementation and Evaluation of Congestion Control for Multipath TCP
Damon Wischik, Costin Raiciu, Adam Greenhalgh, and Mark Handley, University College London

3:00 p.m.–3:30 p.m.  Break

3:30 p.m.–5:00 p.m.  Wednesday
Data-Intensive Computing
CIEL: A Universal Execution Engine for Distributed Data-Flow Computing
Derek G. Murray, Malte Schwarzkopf, Christopher Smowton, Steven Smith, Anil Madhavapeddy, and Steven Hand, University of Cambridge Computer Laboratory

A Knowledge Framework for Data Analysis in Networked Systems
Arun Vishwanathan, University of Southern California Information Sciences Institute; Aleleya Hussain and Stephen Schwab, Sparta Inc.; Jelena Mirkovic, University of Southern California Information Sciences Institute
Paxos Replicated State Machines as the Basis of a High-Performance Data Store
William J. Bolosky, Microsoft Research; Dexter Bradshaw, Randolph B. Haagens, Norbert P. Kusters, and Peng Li, Microsoft Research

Thursday, March 31

9:00 a.m.–10:30 a.m.  Thursday
Security and Privacy
Bootstrapping Accountability in the Internet We Have
Ang Li, Xin Liu, and Xiaowei Yang, Duke University
Privadv: Practical Privacy in Online Advertising
Sakat Guha, Microsoft Research; Bin Cheng and Paul Francis, MPI-SWS
Bazaar: Strengthening User Reputations in Online Marketplaces
Ansgar Poss, MPI-SWS and Rice University; Vijit Shah and Alan Mislove, Northeastern University

10:30 a.m.–11:00 a.m.  Break

11:00 a.m.–noon  Thursday
Energy and Storage
Devdrop: An Energy-Aware Task Scheduler for Computational RFID
Michael Buettner, University of Washington; Benjamin Greenstein, Intel Labs Seattle; David Wetherall, University of Washington and Intel Labs Seattle
SSDAloc: Hybrid SSD/RAM Memory Management Made Easy
Anirudh Badlam and Vivek S. Pai, Princeton University

Noon–1:30 p.m.  Lunch (on your own)

1:30 p.m.–3:00 p.m.  Thursday
Debugging and Correctness
Model Checking a Networked System Without the Network
Rachid Guenarioui and Maysam Yabandeh, EPFL
FATE and DESTINI: A Framework for Cloud Recovery Testing
Haryadi S. Gunawi, University of California, Berkeley; Thanh Do, University of Wisconsin, Madison; Pallavi Joshi, Peter Alvaro, and Joseph M. Hellerstein, University of California, Berkeley; Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau, University of Wisconsin, Madison; Koushik Sen, University of California, Berkeley; Dhruva Borthakur, Facebook
Slicetime: A Platform for Scalable and Accurate Network Emulation
Elias Weingaertner, Florian Schmidt, Hendrik vom Lohm, Tobias Heer, and Klaus Wehrle, RWTH Aachen University

3:00 p.m.–3:30 p.m.  Break

3:30 p.m.–4:30 p.m.  Thursday
Mobile Wireless
Accurate, Low-Energy Trajectory Mapping for Mobile Devices
Arvind Thittagaron, Lenin Ravindranath, Hari Balakrishnan, Samuel Madden, and Lewis Girod, MIT CSAIL
Improving Wireless Network Performance Using Sensor Hints
Lenin Ravindranath, Calvin Newport, Hari Balakrishnan, and Samuel Madden, MIT CSAIL

Friday, April 1

9:00 a.m.–10:30 a.m.  Friday
Datacenters Learning to Share
Mesos: A Platform for Fine-Grained Resource Sharing in the Data Center
Benjamin Hindman, Andy Konwinski, Matei Zaharia, Ali Ghodsi, Anthony D. Joseph, Randy Katz, Scott Shenker, and Ion Stoica, University of California, Berkeley
Sharing the Data Center Network
Alan Shiieh, Cornell University and Microsoft Research; Srinikant Kandula, Albert Greenberg, and Changhoon Kim, Microsoft Research
Dominant Resource Fairness: Fair Allocation of Multiple Resources in Datacenters
Ali Ghodsi, Matei Zaharia, Benjamin Hindman, Andy Konwinski, Scott Shenker, and Ion Stoica, University of California, Berkeley

10:30 a.m.–11:00 a.m.  Break

11:00 a.m.–12:30 p.m.  Friday
Wireless and More
PIE in the Sky: Online Passive Interference Estimation for Enterprise WLANs
Vivek Shrivastava, Shravan Rayancha, and Suman Banerjee, University of Wisconsin—Madison; Dina Papagiannaki, Intel Labs, Pittsburgh
SpecNet: Spectrum Sensing Sans Frontieres
Anand Iyer, Krishna Chimalakindi, Vishnu Navda, Ramachandran Ramjee, and Venkata N. Padmanabhan, Microsoft Research India; Chandra R. Murthy, Indian Institute of Science Bangalore
Towards Street-Level Client-Independent IP Geolocation
Yong Wang, University of Electronic Science and Technology of China and Northwestern University; Daniel Burgen, Marcel Flores, and Aleksandar Kuzmanovic, Northwestern University; Cheng Huang, Microsoft Research

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See www.usenix.org/nsdi11 for more information and to register.