

# Christina Delimitrou

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332 Rhodes Hall, Ithaca, NY, 14853 <http://csl.cornell.edu/~delimitrou>

RESEARCH INTERESTS **Computer architecture, distributed systems, cloud computing.**

EDUCATION **Stanford University** 2011–2015  
*Ph.D in Electrical Engineering*  
Advisor: Christos Kozyrakis  
• Dissertation: Improving Resource Efficiency in Cloud Computing

**Stanford University** 2009–2011  
*Masters in Electrical Engineering, GPA: 4.00/4.00*

**National Technical University of Athens** 2004–2009  
*Diploma in Electrical and Computer Engineering, GPA: 9.50/10*

AWARDS AND HONORS **HiPEAC Best Paper Award**, for the paper “Bolt: I Know What You Did Last Summer... In The Cloud”, January 2018.

**HiPEAC Best Paper Award**, for the paper “DRAF: A Low-Power DRAM-Based Reconfigurable Acceleration Fabric”, January 2017.

**IEEE Micro’s Top Picks**, for the paper “DRAF: A Low-Power DRAM-Based Reconfigurable Acceleration Fabric”, January 2017.

**HiPEAC Best Paper Award**, for the paper “Automatic Generation of Efficient Accelerators for Reconfigurable Hardware”, January 2017.

**HiPEAC Best Paper Award**, for the paper “HCloud: Resource-Efficient Provisioning in Shared Cloud Systems”, January 2017.

**John and Norma Balen Sesquicentennial Faculty Fellowship**, July 2016.

**HiPEAC Best Paper Award**, for the paper “Quasar: Resource Efficient and QoS-Aware Cluster Management”, January 2015.

**Facebook Research Fellowship**, 2014–2015.

**IEEE Micro’s Top Picks**, for the paper “Paragon: QoS-Aware Scheduling for Heterogeneous Datacenters”, January 2014.

**Best of Computer Architecture Letters (CAL) for 2013 and Spotlight Paper**, for “The Netflix Challenge: Datacenter Edition”, January 2014.

**Best Paper Award Runner-Up**, for the paper “Paragon: QoS-Aware Scheduling for Heterogeneous Datacenters”, ASPLOS, March 2013.

**Qualcomm Innovation Fellowship Finalist**, 2013.

**Best Paper Award Runner-Up**, for the paper “ECHO: Recreating Network Traffic Maps for Datacenters with Tens of Thousands of Servers”, IISWC, November 2012.

**Stanford Graduate Fellowship**, 2009–2012.

**National Technical University of Athens Award**, for top graduating students in the ECE department, 2009.

Shuang Chen, Shay Galon, **Christina Delimitrou**, Srilatha Manne, Jose Martinez. “[Workload Characterization of Interactive Cloud Services on Big and Small Server Platforms](#)”. *Proc. of the IEEE International Symposium on Workload Characterization, Seattle, WA, October 2017*.

**Christina Delimitrou**, Christos Kozyrakis. “[Bolt: I Know What You Did Last Summer... In The Cloud](#)”. *Proc. of the Twenty Second International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Xi'an, China, April 2017*.

Mingyu Gao, **Christina Delimitrou**, Dimin Niu, Krishna Malladi, Hongzhong Zheng, Bob Brennan and Christos Kozyrakis. “[DRAF: A Low-Power DRAM-Based Reconfigurable Acceleration Fabric](#)”. *Proc. of the 43rd International Symposium on Computer Architecture, Seoul, June 2016*. **Selected in IEEE Micro’s Top Picks for 2016**.

David Koeplinger, Raghu Prabhakar, Yaqi Zhang, **Christina Delimitrou**, Christos Kozyrakis, Kunle Olukotun. “[Automatic Generation of Efficient Accelerators for Reconfigurable Hardware](#)”. *Proc. of the 43rd International Symposium on Computer Architecture (ISCA), Seoul, June 2016*.

**Christina Delimitrou**, Christos Kozyrakis. “[HCloud: Resource-Efficient Provisioning in Shared Cloud Systems](#)”. *Proc. of the Twenty First International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Atlanta, GE, April 2016*.

**Christina Delimitrou**, Daniel Sanchez and Christos Kozyrakis. “[Tarcil: Reconciling Scheduling Speed and Quality in Large, Shared Clusters](#)”. *Proc. of the Sixth ACM Symposium on Cloud Computing (SOCC), Kohala Coast, HI, August 2015*.

**Christina Delimitrou** and Christos Kozyrakis. “[Quasar: Resource-Efficient and QoS-Aware Cluster Management](#)”. *Proc. of the Nineteenth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Salt Lake City, UT, March 2014*.

**Christina Delimitrou** and Christos Kozyrakis. “[iBench: Quantifying Interference for Datacenter Applications](#)”. *Proc. of the IEEE International Symposium on Workload Characterization (IISWC), Portland, OR, September 2013*.

**Christina Delimitrou**, Nick Bambos and Christos Kozyrakis. “[QoS-Aware Admission Control in Heterogeneous Datacenters](#)”. *Proc. of the International Conference on Autonomic Computing (ICAC), San Jose, CA, June 2013*. [[Extended version](#)]

**Christina Delimitrou** and Christos Kozyrakis. “[Paragon: QoS-Aware Scheduling for Heterogeneous Datacenters](#)”. *Proc. of the Eighteenth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Houston, TX, March 2013*. **Nominated for Best Paper Award**. **Selected as Invited Paper in the Transactions on Computer Systems (TOCS)**. **Selected in IEEE Micro’s Top Picks for 2013**.

**Christina Delimitrou**, Sriram Sankar, Aman Kansal, Christos Kozyrakis. “[ECHO: Recreating Network Traffic Maps for Datacenters with Tens of Thousands of Servers](#)”. *Proc. of the IEEE International Symposium on Workload Characterization (IISWC), San Diego, CA, November 2012*.

**Christina Delimitrou**, Sriram Sankar, Kushagra Vaid, Christos Kozyrakis. “[Decoupling Datacenter Studies from Access to Large-Scale Applications: A Modeling](#)

Approach for Storage Workloads”. *Proc. of the IEEE International Symposium on Workload Characterization (IISWC), Austin, TX, November 2011.*

**Christina Delimitrou**, Sriram Sankar, Badriddine Khessib, Kushagra Vaid, Christos Kozyrakis. “Time and Cost-Efficient Modeling and Generation of Large-Scale TPC Workloads”. *Proc. of the TPC Technology Conference on Performance Evaluation & Benchmarking (TPC TC), in conjunction with VLDB, Seattle, WA, August 2011.*

**Christina Delimitrou**, Sriram Sankar, Kushagra Vaid, Christos Kozyrakis. “Storage I/O Generation and Replay for Datacenter Applications”. (short paper) *Proc. of the IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS), Austin, TX, April 2011.*

JOURNAL  
PUBLICATIONS

**Christina Delimitrou**, Christos Kozyrakis. “Amdahl’s Law for Tail Latency”. *Communications of the ACM (CACM), January 2018.*

Mingyu Gao, **Christina Delimitrou**, Dimin Niu, Krishna Malladi, Hongzhong Zheng, Bob Brennan and Christos Kozyrakis. “DRAF: A Low-Power DRAM-Based Reconfigurable Acceleration Fabric”. *IEEE Micro’s Special Issue on Top Picks from the Computer Architecture Conferences for 2016, May/June 2017.*

**Christina Delimitrou**, Christos Kozyrakis. “Security Implications of Data Mining in Cloud Scheduling”. *Computer Architecture Letters (CAL), vol. 15, no. 2, 2016.*

**Christina Delimitrou** and Christos Kozyrakis. “Quality-of-Service-Aware Scheduling in Heterogeneous Datacenters with Paragon”. *IEEE Micro’s Special Issue on Top Picks from the Computer Architecture Conferences for 2013, May/June 2014.*

**Christina Delimitrou** and Christos Kozyrakis. “QoS-Aware Scheduling in Heterogeneous Datacenters with Paragon”. *ACM Transactions on Computer Systems (TOCS), Vol. 31 Issue 4, December 2013. Invited Paper.*

**Christina Delimitrou**, Christos Kozyrakis. “The Netflix Challenge: Datacenter Edition”. *In Computer Architecture Letters (CAL), January-June 2013.*

**Selected as the Spotlight Paper.**

**Selected in Best of Computer Architecture Letters (CAL) for 2013.**

**Christina Delimitrou**, Sriram Sankar, Kushagra Vaid, Christos Kozyrakis. “Decoupling Datacenter Storage Studies from Access to Large-Scale Applications”. *In Computer Architecture Letters (CAL), July-December 2012. Invited Paper.*

WORKSHOP  
PUBLICATIONS

Neeraj Kulkarni, Feng Qi, Glyfina Fernando, **Christina Delimitrou**. “Leveraging Approximation to Improve Resource Efficiency in the Cloud”. *Proc. of the Workshop on Approximate Computing (WAX’17), colocated with ASPLOS’17, Xi’an, China, April 2017.*

**Christina Delimitrou**, Sriram Sankar, Kushagra Vaid, Christos Kozyrakis. “Accurate Modeling and Generation of Storage I/O for Datacenter Workloads”. *Proc. of the Exascale Evaluation and Research Techniques Workshop (EXERT), in conjunction with ASPLOS, San Diego, CA, March 2011.*

**Christina Delimitrou**, Christos Kozyrakis. “Architecting and Programming the Data center: Where Parallelism meets Commodity Computing”. *Proc. of the Advanced Computer Architecture Research Consortium (ACAR-CCC), February 2010,*

San Diego, CA.

THESIS

**Christina Delimitrou.** “Improving Resource Efficiency in Cloud Computing”. *Ph.D. Thesis, Stanford University.* August 2015.

PRESS

Selected Articles on Quasar:

- **The New York Times.** [Making Cloud-Computing Systems More Efficient](#), Quentin Hardy, March 2014.
- **Stanford Report** (front page). [Stanford engineers create a software tool to reduce the cost of cloud computing](#), Tom Abate, February 2014.
- **Stanford Engineering** (front page). [Stanford engineers create a software tool to reduce the cost of cloud computing](#), Tom Abate, February 2014. Also appeared in: [Green Datacenter News](#), [Scientific Computing](#), [ACM TechNews](#).
- **The Register.** [Stanford academics unleash Quasar cluster juggler on mega bit barns](#), Jack Clark, February 2014.
- **GigaOM Research.** [New software tool for cloud computing cost analysis](#), David S. Linthicum, March 2014.
- **EETimes.** [Datacenter Utilization Boosted](#), Jim Ballingall, January 2014.
- **IBM Midsize Insider.** [Data Center Efficacy: Cracking the 20 Percent Code](#), Doug Bonderud, March 2014.
- **CloudPro.** [Cheaper cloud could emerge from new research](#), Clare Hopping, April 2014.
- **The Stanford Daily.** [University researchers develop software increasing cloud computing efficiency](#), Kylie Jue, April 2014.

SELECTED  
TALKS

**Improving Resource Efficiency in Cloud Computing**

- *Platform Lab Retreat*, Santa Cruz, CA, June 2016.
- *Ericksson Research*, San Jose, CA, January 2016.
- *Schloss Dagstuhl Seminar*, Dagstuhl, Germany, October 2015.
- *MIT*, Cambridge, MA, April 2015.
- *Cornell University*, Ithaca, NY, March 2015.
- *University of Illinois at Urbana-Champaign*, Champaign, IL, March 2015.
- *Harvard University*, Cambridge, MA, March 2015.
- *Columbia University*, New York, NY, February 2015.
- *University of Wisconsin-Madison*, Madison, WI, February 2015.
- *University of California at San Diego*, San Diego, CA, February 2015.

**“Amdahl’s Law” for Tail Latency**

- *SEDCL Annual Forum*. Stanford, CA, January 2015.

**Improving Resource Efficiency in Cluster Management**

- *CS Faculty Lunch*. Stanford, CA, October 2014.
- *VMware Invited Talk*. Palo Alto, CA, October 2014.
- *Berkeley ASPIRE Seminar*. Berkeley, CA, June 2014.
- *Stanford-Berkeley Women in EE/CS Research Meetup*. Stanford, CA, April 2014.
- *Twitter Open Source Conference (OSS)*. San Francisco, CA, April 2014.

- *Industry Academia Partnership (IAP) Cloud Workshop*. Mountain View, CA, December 2013. **Best Presentation Award**
- *Twitter Technical Talk*. San Francisco, CA, September 2013.
- *SEDCL Annual Retreat*. Half Moon Bay, CA, June 2013.
- *Google Platform Seminar*. Mountain View, CA, May 2013.
- *VMware Invited Technical Talk*. Palo Alto, CA, May 2013.
- *SEDCL Annual Forum*. Stanford University, CA, January 2013.

#### **Quasar: Resource-Efficient and QoS-Aware Cluster Management**

- *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS'14)*. Salt Lake City, UT, March 2014.
- *Parallelism Lab Retreat*. Half Moon Bay, CA, January 2014.
- *SEDCL Annual Forum*. Stanford, CA, January 2014.
- *Google Invited Technical Talk*. Mountain View, CA, October 2013.

#### **The Netflix Challenge: Datacenter Edition**

- *IEEE International Symposium on High Performance Computer Architecture (HPCA 20) – Best of CAL Session*. Orlando, FL, February 2014.

#### **iBench: Quantifying Interference for Datacenter Applications**

- *IEEE International Symposium on Workload Characterization (IISWC)*. Portland, OR, September 2013.

#### **QoS-Aware Admission Control in Heterogeneous Datacenters**

- *International Conference on Autonomic Computing (ICAC)*. San Jose, CA, June 2013.

#### **High Utilization and QoS in Modern Datacenters**

- *Qualcomm Innovation Fellowship Finals*. Santa Clara, CA, March 2013.

#### **Paragon: QoS-Aware Scheduling for Heterogeneous Datacenters**

- *Parallelism Lab Retreat*. San Francisco, CA, June 2013.
- *Eighteenth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. Houston, TX, March 2013.
- *Stanford-Berkeley Women in Engineering Annual Meeting*. Berkeley, CA, March 2013.
- *Twitter Invited Talk*. San Francisco, CA, October 2012.
- *Google Invited Technical Talk*. Mountain View, CA, August 2012.
- *SEDCL Annual Retreat*. San Francisco, CA, June 2012.

#### **ECHO: Recreating Network Traffic Maps in Datacenters with Tens of Thousands of Servers**

- *IEEE International Symposium on Workload Characterization (IISWC)*. San Diego, CA, November 2012.

#### **Decoupling Datacenter Studies from Access to Large-Scale Applications: A Modeling Approach for Storage Workloads**

- *Invited talk, Cisco Corporation*. Santa Clara, CA, April 2012.
- *IEEE International Symposium on Workload Characterization (IISWC)*. Austin, TX, November 2011.

**Storage I/O Generation and Replay for Datacenter Applications**

- *International Symposium on Performance Analysis of Systems and Software (ISPASS)*. Austin, TX, April 2011.

**Accurate Modeling and Generation of Storage I/O for Datacenter Workloads**

- *Exascale Evaluation and Research Techniques Workshop (EXERT)*. San Diego, CA, March 2011.

**Accurate Analytical Modeling of Large-Scale Datacenter Applications**

- *Google EPIC Group Retreat*. Mountain View, CA, November 2010.

**Modeling and Generation of Datacenter Storage Workloads**

- *Microsoft Research Redmond*. Redmond, WA, September 2010.

INDUSTRY EXPERIENCE	<b>Twitter</b> , San Francisco, CA <i>Research Intern, Runtime Systems Group</i> Mentors: Rob Benson, Chris Lambert, Brian Wickman.	Summer 2013
	<b>Microsoft Research</b> , Redmond, WA <i>Business Guest, Online Services Division</i> Collaborators: Kushagra Vaid, Sriram Sankar, Aman Kansal.	June 2011–October 2012
	<b>Microsoft Research</b> , Redmond, WA <i>Research Intern, Networked Embedded Computing Group &amp; Online Services Division</i> Mentors: Kushagra Vaid, Sriram Sankar, Aman Kansal.	Summer 2010
TEACHING EXPERIENCE	<b>Instructor</b> , Computer Architecture (ECE4750), <b>Instructor</b> , Topics in Datacenter Computing (ECE6960), <b>Instructor</b> , Computer Architecture (Stanford EE282), <b>Guest Lecturer</b> , Advanced Multicore Systems (Stanford CS316), <b>Co-Instructor</b> , Advanced Multicore Systems (Stanford CS316) <b>Co-Instructor</b> , Computer Architecture (Stanford EE282) <b>Teaching Assistant</b> , Computer Architecture (Stanford EE282)	Fall 2017 Fall 2016 Spring 2016 Fall 2015 Fall 2014 Spring 2014 Spring 2013
SERVICE	<b>Academic Community</b> <ul style="list-style-type: none"><li>• Program Committee member for ASPLOS'18, ISCA'18, ASPLOS'17, ISCA'17, ATC'17, ISPASS'17, IISWC'16.</li><li>• Co-chair and organizer for the First Workshop on Resource-Efficient Cloud Computing (REC2), in ISCA 2015.</li></ul> <b>Diversity</b> <ul style="list-style-type: none"><li>• CRA-W, IEEE Women in Computer Science &amp; Engineering Member.</li></ul>	
LANGUAGES	English, Greek (native), French, Spanish.	