Christina Delimitrou

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CONTACT INFORMATION

Christina Delimitrou
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RESEARCH INTERESTS

Cloud computing, computer architecture, applied machine learning.

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
Advisor: Christos Kozyrakis

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

PROFESSIONAL EXPERIENCE

Massachusetts Institute of Technology 2022–present
Associate Professor, *Department of Electrical Engineering and Computer Science*

Cornell University 2016–2022
Assistant Professor, *School of Electrical and Computer Engineering*
Graduate Field Member, *Computer Science*

Stanford University 2015–2016
Postdoctoral Fellow, *Computer Science Department*
Supervisor: Christos Kozyrakis

- Conducted research on cluster management and hardware acceleration for cloud services.
- Taught two courses: Advanced Processor Architecture (CS316) and Computer Architecture (EE282).
- Mentored several Ph.D., M.S., and undergraduate students.

Stanford University 2009–2015
Graduate Research Assistant, *Electrical Engineering Department*
Advisor: Christos Kozyrakis

- Conducted research on improving the resource efficiency and QoS-awareness of large-scale datacenters.

Twitter, San Francisco, CA Summer 2013
Research Intern, Runtime Systems Group
Mentors: Rob Benson, Chris Lambert, Brian Wickman.

- Studied the utilization of Twitter's datacenters, designed load prediction techniques that allow unused resources to be reclaimed, and quantified the interference co-scheduled jobs experience in shared resources.

Microsoft Research, Redmond, WA June 2011–October 2012
Business Guest, Online Services Division
Collaborators: Kushagra Vaid, Sriram Sankar, Aman Kansal.

- Designed modeling and simulation techniques for large systems and applications.

- Designed a novel storage consolidation scheme that improves energy efficiency while preserving QoS.

Microsoft Research, Redmond, WA Summer 2010
Research Intern, Networked Embedded Computing Group & Online Services Division
Mentors: Kushagra Vaid, Sriram Sankar, Aman Kansal.

- Developed a modeling and workload generation framework for datacenter storage applications and verified its accuracy against real datacenter applications.
- Used the framework for a series of efficiency and cost optimization studies, such as caching and defragmentation.

AWARDS AND HONORS

IEEE Micro's Top Picks, for the paper "Sage: Practical & Scalable ML-Driven Performance Debugging in Microservices", January 2022.

IEEE Micro's Top Picks Honorable Mention, for the paper "Dagger: Efficient and Fast RPCs in Cloud Microservices with Near-Memory Reconfigurable NICs", January 2022.

Google-Initiated Focused Research Award, November 2021.

Intel Research Award (Hardware Acceleration for Microservices), September 2021.

Intel Research Award (ML for Cloud Systems), May 2021.

Facebook Faculty Research Award, January 2021.

Cornell School of Engineering Research Excellence Award, November 2020.

Google Research Award in Recognition of Technical Leadership and Achievements in Systems Research, October 2020.

Intel Rising Star Award, October 2020.

IEEE TCCA Young Architect Award, May 2020.

Microsoft Research Faculty Fellowship, March 2020.

Google Faculty Research Award, February 2020.

Alfred P. Sloan Foundation Research Fellowship, February 2020.

IEEE Micro's Top Picks, for the paper "An Open-Source Benchmark Suite for Microservices and Their Hardware-Software Implications for Cloud and Edge Systems", January 2020.

Facebook Faculty Research Award, December 2019.

2018 Best Paper Award for Computer Architecture Letters (CAL), for "The Architectural Implications of Cloud Microservices", November 2019.

College of Engineering Teaching & Mentoring Excellence Award, September 2019.

ASPLOS Hall of Fame Member, April 2019.

NSF CAREER Award, February 2019.

Google Faculty Research Award, February 2019.

Best of Computer Architecture Letters (CAL) for 2018 and **Spotlight Paper**, for "The Architectural Implications of Cloud Microservices", January 2019.

Facebook Faculty Research Award, March 2018.

VMWare Research Faculty Award, March 2018.

IEEE Micro's Top Picks, for the paper "Bolt: I Know What You Did Last Summer... In The Cloud", January 2018.

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 Nomination, for the paper "Quasar: Resource Efficient and QoS-Aware Cluster Management", ASPLOS, April 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.

CONFERENCE PUBLICATIONS

Nikita Lazarev, Varun Gohil, James Tsai, Andy Anderson, Bhushan Chitlur, Zhiru Zhang, and **Christina Delimitrou**. "Sabre: Improving Memory Prefetching in Serverless MicroVMs with Near-Memory Hardware-Accelerated Compression". *to appear in the 18th USENIX Symposium on Operating Systems Design and Implementation (OSDI), Santa Clara, California, July 2024.*

Zhuangzhuang Zhou, Vaibhav Gogte, Nilay Vaish, Chris Kennelly, Patrick Xia, Svilen Kanev, Tipp Moseley, **Christina Delimitrou**, and Partha Ranganathan. "Characterizing a Memory Allocator at Warehouse Scale". *to appear in the 29th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), San Diego, California, April 2024.*

Yanqi Zhang, Zhuangzhuang Zhou, Sameh Elnikety, and **Christina Delimitrou**. "Ursa: Lightweight Resource Management for Cloud-Native Microservices". *In the 30th International Symposium on Computer Architecture (HPCA), Edinburgh, Scotland, March 2024.*

Yueying Li, Nikita Lazarev, David Koufaty, Yijun Yin, Andy Anderson, Zhiru Zhang, Edward Suh, Kostis Kaffes, and **Christina Delimitrou**. "LibPreemptible: Enabling Fast, Adaptive, and Hardware-Assisted User-Space Scheduling". *In the 30th International Symposium on Computer Architecture (HPCA), Edinburgh, Scotland, March 2024.*

Nikita Lazarev, Tao Ji, Anuj Kalia, Daehyeok Kim, Ilias Marinos, Francis Yan, **Christina Delimitrou**, Zhiru Zhang, Aditya Akella. "Resilient Baseband Processing in Virtualized RANs with Slingshot". *To appear in the ACM Special Interest Group on Data Communication (SIGCOMM), New York, New York, September 2023.*

Mingyu Liang, Zhongyi Lin, Louis Feng, Pavani Panakanti, Srinivas Sridharan, Wenyin Fu, and **Christina Delimitrou**. "Mystique: Enabling Accurate and Scalable Generation of Production AI Benchmarks". *To appear in 50th International Symposium on Computer Architecture (ISCA), Orlando, Florida, June 2023.*

Mingyu Liang*, Yu Gan*, Yueying Li, Carlos Torres, Abhishek Dhanotia, Mahesh Ketkar, and **Christina Delimitrou**. "Ditto: End-to-End Application Cloning for Networked Cloud Services". *To appear in 28th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Vancouver, Canada, April 2023.*

Zhuangzhuang Zhou, Yanqi Zhang, and **Christina Delimitrou**. "AQUATOPE: QoS-and-Uncertainty-Aware Resource Management for Multi-Stage Serverless Workflows". *To appear in 28th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Vancouver, Canada, April 2023.*

Liam Patterson, David Pigorovsky, Brian Dempsey, Nikita Lazarev, Aditya Shah, Clara Steinhoff, Ariana Bruno, Justin Hu, and **Christina Delimitrou**. "HiveMind: A Hardware-Software System Stack for Serverless Edge Swarms". *In 49th International Symposium on Computer Architecture (ISCA), New York, NY, June 2022.*

Shuang Chen, Angela Jin, **Christina Delimitrou**, and José Martinez. "ReTail: Opting for Learning Simplicity to Enable QoS-Aware Power Management in the Cloud". *In 28th IEEE International Symposium on High-Performance Computer Architecture (HPCA-28), Seoul, South Korea, February 2022.*

Shuang Chen, Yi Jiang, **Christina Delimitrou**, and José Martinez. "PIMCloud: QoS-Aware Resource Management of Latency-Critical Applications in Clouds with Processing-in-Memory". *In 28th IEEE International Symposium on High-Performance Computer Architecture (HPCA-28), Seoul, South Korea, February 2022.*

Yanqi Zhang, Iñigo Goiri, Gohar Irfan Chaudhry, Rodrigo Fonseca, Sameh Elnikety, **Christina Delimitrou**, and Ricardo Bianchini. "Faster and Cheaper Serverless Computing on Harvested Resources". *In 28th ACM Symposium on Operating Systems Principles (SOSP), Virtual, October 2021.*

Yu Gan, Mingyu Liang, Sundar Dev, David Lo, and **Christina Delimitrou**. "Sage: Practical & Scalable ML-Driven Performance Debugging in Microservices". *In 26th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Virtual, April 2021.*

Yanqi Zhang, Weizhe Hua, Zhuangzhuang Zhou, Ed Suh, and **Christina Delimitrou**. "Sinan: ML-Based & QoS-Aware Resource Management for Cloud Microservices". *In 26th ACM International Conference on Architectural Support for Programming Lan-*

guages and Operating Systems (ASPLOS), Virtual, April 2021.

Nikita Lazarev, Shaojie Xiang, Neil Adit, Zhiru Zhang, and **Christina Delimitrou**. "Dagger: Efficient and Fast RPCs in Cloud Microservices with Near-Memory Reconfigurable NICs. *In 26th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Virtual, April 2021.*

Neeraj Kulkarni, Gonzalo Gonzalez-Pumariega, Amulya Khurana, Christine Shoemaker, **Christina Delimitrou**, and David Albonesi. "CuttleSys: Data-Driven Resource Management for Interactive Applications on Reconfigurable Multicores". *Proc. of the 53rd IEEE/ACM International Symposium on Microarchitecture (MICRO), Athens, Greece, October 2020.*

Yu Gan, Yanqi Zhang, Dailun Cheng, Ankitha Shetty, Priyal Rathi, Nayantara Katarki, Ariana Bruno, Justin Hu, Brian Ritchken, Brendon Jackson, Kelvin Hu, Meghna Pancholi, Brett Clancy, Chris Colen, Fukang Wen, Catherine Leung, Siyuan Wang, Leon Zaruvinsky, Mateo Espinosa, Yuan He, and **Christina Delimitrou**. "An Open-Source Benchmark Suite for Microservices and Their Hardware-Software Implications for Cloud and Edge Systems". *Proc. of the Twenty Fourth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Providence, RI, April 2019.* **Selected in IEEE Micro's Top Picks for 2019**.

Yu Gan, Yanqi Zhang, Kelvin Hu, Yuan He, Meghna Pancholi, Dailun Cheng, and **Christina Delimitrou**. "Seer: Leveraging Big Data to Navigate the Complexity of Performance Debugging in Cloud Microservices". *Proc. of the Twenty Fourth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Providence, RI, April 2019.* **Invited to SIGOPS Review**.

Shuang Chen, **Christina Delimitrou**, and José Martinez. "PARTIES: QoS-Aware Resource Partitioning for Multiple Interactive Services". *Proc. of the Twenty Fourth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Providence, RI, April 2019.*

Zhiming Shen, Zhen Sun, Gur-Eyal Sela, Eugene Bagdasaryan, **Christina Delimitrou**, Robbert Van Renesse, and Hakim Weatherspoon. "X-Containers: Breaking Down Barriers to Improve Performance and Isolation of Cloud-Native Containers". *Proc. of the Twenty Fourth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Providence, RI, April 2019.*

Yanqi Zhang, Yu Gan, and **Christina Delimitrou**. uqSim: Enabling Accurate and Scalable Simulation for Interactive Microservices. *Proc. of the IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS), Madison, WI, March 2019.*

Neeraj Kulkarni, Feng Qi, and **Christina Delimitrou**. "Pliant: Leveraging Approximation to Improve Datacenter Resource Efficiency". *Proc. of the 25th IEEE International Symposium on High-Performance Computer Architecture (HPCA), Washington DC, February 2019.*

Francisco Romero and **Christina Delimitrou**. "Mage: Online and Interference-Aware Scheduling for Multi-Scale Heterogeneous Systems". *Proc. of the 27th International Conference on Parallel Architectures and Compilation Techniques (PACT), Limassol, Cyprus, November 2018.*

Shuang Chen, Shay Galon, **Christina Delimitrou**, Srilatha Manne, Jose Martinez. "Workload Characterization of Interactive Cloud Services on Big and Small Server Plat-

forms". *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.* **Selected in IEEE Micro's Top Picks for 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

Mingyu Liang*, Yu Gan*, Yueying Li, Carlos Torres, Abhishek Dhanotia, Mahesh Ketkar, and **Christina Delimitrou**. **??**"End-to-End Cloud Application Cloning with Ditto". *to appear in IEEE Micro Special Issue on Top Picks from the Computer Architecture Conferences, May/June 2024.*

Varun Gohil, Sundar Dev, Gaurang Upasani, David Lo, Partha Ranganathan, and **Christina Delimitrou**. **??**"The Importance of Generalizability in Machine Learning for Systems". *to appear in Computer Architecture Letters, 2024.*

Yu Gan, Mingyu Liang, Sundar Dev, David Lo, and **Christina Delimitrou**. "Practical & Scalable ML-Driven Cloud Performance Debugging with Sage". *IEEE Micro Special Issue on Top Picks from the Computer Architecture Conferences, May/June 2022.*

Weijia Song, **Christina Delimitrou**, Zhiming Shen, Robbert Van Renesse, Hakim Weatherspoon, Lotfi Benmohamed, Frederic De Vaulx, and Charif Mahmoudi. "CacheInspector: Reverse Engineering Cache Resources in Public Clouds". *ACM Transactions on Architecture and Code Optimization (ACM TACO), 2021.*

Nikita Lazarev, Neil Adit, Shaojie Xiang, Zhiru Zhang, and **Christina Delimitrou**. "Dagger: Towards Efficient RPCs in Cloud Microservices with Near-Memory Reconfigurable NICs". *Computer Architecture Letters (CAL), 2020.*

Yu Gan, Yanqi Zhang, Dailun Cheng, Ankitha Shetty, Priyal Rathi, Nayantara Katarki, Ariana Bruno, Justin Hu, Brian Ritchken, Brendon Jackson, Kelvin Hu, Meghna Pancholi, Brett Clancy, Chris Colen, Fukang Wen, Catherine Leung, Siyuan Wang, Leon Zaruvinsky, Mateo Espinosa, Yuan He, and **Christina Delimitrou**. "Unveiling the Hardware and Software Implications of Microservices in Cloud & Edge Systems". *IEEE Micro's Special Issue on Top Picks from the Computer Architecture Conferences for 2019, May/June 2020.*

Yu Gan, Yanqi Zhang, Kelvin Hu, Dailun Cheng, Yuan He, Meghna Pancholi, and **Christina Delimitrou**. "Leveraging Deep Learning to Improve Performance Predictability in Cloud Microservices with Seer". *ACM SIGOPS Operating Systems Review, Vol. 53 Issue 1, July 2019.* **Invited Paper**.

Neeraj Kulkarni, Feng Qi, and **Christina Delimitrou**. "Leveraging Approximation to Improve Datacenter Resource Efficiency". *Computer Architecture Letters (CAL), vol. 17, issue 2, 2018.*

Yu Gan and **Christina Delimitrou**. "The Architectural Implications of Cloud Microservices". *Computer Architecture Letters (CAL), vol. 17, issue 2, 2018.*
Selected as the Spotlight Paper.
Selected in Best of Computer Architecture Letters (CAL) for 2018.

Christina Delimitrou and Christos Kozyrakis. "Uncovering the Security Implications of Cloud Multi-Tenancy with Bolt". *IEEE Micro's Special Issue on Top Picks from the Computer Architecture Conferences for 2017, May/June 2018.*

Christina Delimitrou, Christos Kozyrakis. "Amdahl's Law for Tail Latency". *Communications of the ACM (CACM), Vol. 61 No. 8, August 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

Yu Gan, Sundar Dev, David Lo, and **Christina Delimitrou**. "Sage: Leveraging ML To Diagnose Unpredictable Performance in Cloud Microservices". *Proc. of the Workshop on ML for Computer Architecture and Systems (MLArchSys), "Valencia, Spain", June 2020.*

Yanqi Zhang, Weizhe Hua, Zhuangzhuang Zhou, Ed Suh, and **Christina Delimitrou**. "Sinan: Data-Driven Resource Management for Interactive Microservices". *Proc. of the Workshop on ML for Computer Architecture and Systems (MLArchSys), "Valencia, Spain", June 2020.*

Yu Gan, Meghna Pancholi, Dailun Cheng, Siyuan Hu, Yuan He, and **Christina Delimitrou**. "Seer: Leveraging Big Data to Navigate the Increasing Complexity of Cloud Debugging". *Proc. of the 10th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud), Boston, MA, July 2018.*

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), 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.*

PREPRINTS

Shannon Joyner, Michael MacCoss, **Christina Delimitrou**, and Hakim Weatherspoon. Ripple: A Practical Declarative Programming Framework for Serverless Compute. *In arXiv:2001.00222 [cs.DC], January 2020.*

THESIS

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

PRESS

Selected articles on our microservices work:

- **Cornell Research**. Cloud Computing for Agility, Complexity, and Speed, May 2020.
- **ECE Cornell News**. Christina Delimitrou receives Microsoft Research Faculty Fellowship, April 2020.
- **ECE Cornell News**. Christina Delimitrou wins Google Faculty Research Award, February 2020.
- **ECE Cornell News**. Christina Delimitrou receives Sloan Research Fellowship for high-risk, high-return research, February 2020.
- **Cornell Chronicle**. Davis, Delimitrou, DiStasio win Sloan fellowships, February 2020.
- **The Morning Paper**. Seer: leveraging big data to navigate the complexity of performance debugging in cloud microservices, May 2019.
- **The Morning Paper**. An open-source benchmark suite for microservices and their hardware-software implications for cloud & edge systems, May 2019.
- **Cornell Chronicle, Cornell ECE News, Cornell CS News**. With help from AI, microservices divvy up tasks to improve cloud apps, March 2019.

Selected articles on Bolt:

- **IEEE Computer Society**. Striking like a "Bolt" Out of the Blue: A New Attack System Tests Security in Multi-Tenant Cloud Infrastructures, Lori Cameron, September 2018.
- **The Morning Paper**. I Know What You Did Last Summer In The Cloud, Adrian Colyer, May 2017.

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 RECENT TALKS

Leveraging ML to Design Better Large-Scale Systems

- *VMWare Keynote*, virtual, November 2021.
- *Microsoft Research Faculty Summit*, virtual, October 2021.
- *Intel Research Summit*, virtual, October 2021.
- *LASDIOS Workshop in VLDB*, virtual, August 2021.
- *Intel Rising Star Seminar*, virtual, June 2021.
- *MLArchSys'21 Keynote in ISCA*, virtual, June 2021.
- *Cloud Intelligence Workshop Keynote*, virtual, May 2021.
- *Computing Frontiers'21 Keynote*, virtual, May 2021.
- *NOPE Workshop Keynote in ASPLOS*, virtual, April 2021.
- *IBM Systems Seminar*, virtual, February 2021.
- *IAP Colloquium*, virtual, January 2021.
- *Intel ENA Systems Seminar*, virtual, December 2020.
- *University of Wisconsin-Madison AI Colloquium*, virtual, November 2020.
- *University of Rochester Systems Seminar*, virtual, November 2020.
- *Facebook AI Summit*, virtual, October 2020.
- *Google Platforms Seminar*, virtual, September 2020.
- *JUMP ADA Center*, virtual, May 2020.
- *Microsoft Research*, Redmond, WA, February 2020.
- *DARPA ISAT Workshop*, Chicago, IL, January 2020.

The System Implications of Microservices and How Big Data Can Help

- *University of Rochester*, Rochester, NY, October 2019.
- *Stanford University*, Stanford, CA, October 2018.
- *Google Platforms Seminar*, Sunnyvale, CA, October 2018.
- *VMWare*, Palo Alto, CA, June 2018.
- *Facebook*, Menlo Park, CA, June 2018.
- *National Technical University of Athens*, Athens, Greece, June 2018.
- *ASBD Workshop Invited Keynote (ISCA)*, Los Angeles, CA, June 2018.

Seer: Leveraging Big Data to Navigate the Complexity of Performance Debugging in Cloud Microservices

- *Netflix System Seminar*, San Francisco, CA, May 2019.
- *ASPLOS'19 conference talk*, Providence, RI, April 2019.
- *HotCloud'18 workshop talk*, Boston, MA, July 2018.

DeathStarBench: The Implications of Cloud and IoT Microservices

- *Google Platform Seminar*, Mountain View, CA, December 2017.

- *Ericksson Seminar*, Sunnyvale, CA, December 2017.
- *Twitter Seminar*, San Francisco, CA, April 2017.

Bolt: I Know What You Did Last Summer... In The Cloud

- *Google Platform Seminar*, Mountain View, CA, April 2017.
- *ASPLOS*, Xi'an, China, April 2017.
- *Stanford Platform Lab Seminar*, Stanford, CA, April 2017.

TEACHING EXPERIENCE

Instructor, Datacenter Computing (ECE5710), Spring 2021, Spring 2020
Instructor, Computer Architecture (ECE4750), Fall 2021, Fall 2020, Fall 2019, Fall 2018, Fall 2017
Instructor, Datacenter Computing (ECE5990), Spring 2019, Spring 2018, Fall 2016
Instructor, Computer Architecture (Stanford EE282), Spring 2016
Co-Instructor, Advanced Multicore Systems (Stanford CS316), Fall 2015
Co-Instructor, Advanced Multicore Systems (Stanford CS316) Fall 2014
Co-Instructor, Computer Architecture (Stanford EE282) Spring 2014
Teaching Assistant, Computer Architecture (Stanford EE282) Spring 2013

STUDENT ADVISEES

Current Ph.D. Students

- Yanqi Zhang 2017-present
- Mingyu Liang 2019-present
- Zhuangzhuang Zhou 2019-present
- Nikita Lazarev 2019-present (co-advised with Prof. Z. Zhang)
- Yueying (Lisa) Li 2020-present
- Varun Gohil 2021-present

Ph.D. Alumni

- Yu Gan 2016-2021
- Shuang Chen (co-advised with Prof. J. Martinez) 2016-2021
- Neeraj Kulkarni (co-advised with Prof. D. Albonesi) 2016-2020

M.Eng. Alumni

- Sujith Ramesh, ECE M.Eng.'21 2020-2021
- Clara Steinhoff, ECE M.S.'21 2019-2021
- Joy Qi, ECE M.Eng.'21 2020-2021
- Zhaopeng Xu, ECE M.Eng.'20 2019-2020
- Sirui Wang, ECE M.Eng'20 2019-2020
- Zixiao Wang, ECE M.Eng'20 2019-2020
- Shannon Joyner, CS M.Eng'20 2018-2020
- Zhongkai Liu, ECE M.Eng.'20 2019-2020
- Zhongling Liu, ECE M.Eng'19 2018-2019
- Anant Desai, ECE M.Eng'19 2018-2019
- Rick Lin, ECE M.Eng'19 2018-2019
- Yang Liu, CS M.Eng'19 2018-2019
- Nicky Lim, CS M.Eng'19 2018-2019

- Han Li, CS M.Eng'19 2018-2019
- Jake Padilla, CS M.Eng'19 2018-2019
- Jiexiao Wang, ECE M.Eng'19 2018-2019
- Lavanua Kannan, CS M.Eng'19 2018-2019
- Ariana Bruno, ECE M.Eng'18 2017-2018
- Justin Hu, CS M.Eng'18 2017-2018
- Brian Ritchken, ECE M.Eng'18 2017-2018
- Brendon Jackson, ECE M.Eng'18 2017-2018
- Siyuan Hu, CS M.Eng'18 2017-2018
- Yuan He, ECE M.Eng'18 2017-2018
- Brett Clancy, CS M.Eng'18 2017-2018
- Chris Colen, CS M.Eng'18 2017-2018
- Ankitha Shetty, CS M.Eng'18 2017-2018
- Nayantara Katarki, CS M.Eng'18 2017-2018
- Dailun Cheng, CS M.Eng'18 2017-2018
- Priyal Rathi, ECE M.Eng'17 2017-2017
- Feng Qi, ECE M.Eng'17 2016-2018
- Blake Schmidt, ECE M.Eng'17 2016-2017
- Mahantesh Salimath, ECE M.Eng'17 2016-2017
- Premdeep Sharma, ECE M.Eng'17 2016-2017
- Anirudh Ramachandra, CS M.Eng'17 2016-2017
- Siyuan Wang, CS M.Eng'17 2016-2017
- Leon Zaruvinsky, CS M.Eng'17 2016-2017
- Mateo Espinosa, CS M.Eng'17 2016-2017
- Fukang Wen, CS M.Eng'16 2016-2016
- Catherine Leung, CS M.Eng'16 2016-2016
- Tania Tocalini, CS M.Eng'16 2016-2016
- Bryan Li, CS M.Eng'16 2016-2016

Undergraduate Alumni

- Randy Zhou, ECE BS'21 2019-2021
- Aditya Shah, CS BS'20 2019-2020
- Priyanka Dilip, ECE BS'20 2019-2020
- Divya Agrawal, CS BS'20 2018-2020
- Meghna Pancholi, CS BS'20 2017-2020
- Adit Gupta, CS BS'19 2018-2019
- Sanjana Kaundinya, CS BS'19 2018-2019
- Nellie (Yannan) Wu, CS BS'17 2016-2017

PROFESSIONAL SERVICE

Academic Community

- Program Committee member for ASPLOS'22, ISCA'22 (ERC), HPCA'22 (ERC), ASPLOS'21, MICRO'21, ISCA'21 (ERC), HPCA'21 (ERC), MICRO'20, OSDI'20 (ERC), ASPLOS'20, ASPLOS'19, ISCA'20 (ERC), HPCA'20 (ERC), MICRO'19 (ERC), IEEE Micro Top Picks'19, HPCA'19 (ERC), PLDI'19 (ERC), MICRO'18, ASPLOS'18, ISCA'18, HotCloud'18, ATC'18, ASPLOS'17, ISCA'17, ATC'17, MICRO'17 (ERC), ISPASS'17, IISWC'16.
- Program Chair of the Symposium on Cloud Computing (SOCC'20).
- Program Co-Chair of HotCloud'19.
- Co-Chair of the First Workshop on Disaggregated Datacenters, in ASPLOS'19.
- Publications Chair for ASPLOS'22.
- Financial Chair for MICRO'20.
- Registrations Chair for ISCA'20.
- Student Travel Grants co-Chair for ASPLOS'19.
- Workshops Chair for ISCA'19.
- Publications Chair for ISPASS'18.
- Publicity Chair for ISCA'17, ISPASS'17.
- Co-chair and organizer for the First Workshop on Resource-Efficient Cloud Computing (REC2), in ISCA 2015.

Internal Service

- Graduate Committee 2018,2019,2020,2021
- ECE Colloquium Committee 2018,2019,2020,2021
- ECE Faculty Search Committee 2019

Diversity

- ECE Female & URM Student Research Mentor.
- CRA-W, IEEE Women in Computer Science & Engineering Member.

Professional Society Membership

- ACM SIGARCH 2013-present
- IEEE Computer Society 2008-present