Dr. John D. Kubiatowicz

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Education:	Massachusetts Institute of Technology	Cambridge, MA	
	PhD in Electrical Engineering and Computer Science. Minor in Physics.	GPA: 5.0/5.0.	2/98
	S.M. in Electrical Engineering and Computer Science.	GPA: 5.0/5.0.	2/93
	Double S.B in Electrical Engineering and Physics.	GPA: 5.0/5.0.	6/87

Research Interests: Speculative approaches for constructing computer systems. Interests include massively parallel systems, quantum computing, and reconfigurable computing. Other interests include security, privacy, and resilience to faults and denial of service attacks in internet-scale systems.

Research Experience:

University of California at Berkeley — Berkeley, CA

Developing new hardware and software mechanisms for manycore systems. Research includes novel OS organizations, hardware support for security, communication, and QoS.

Developing internet-scale storage utilities. Developing secure protocols that provide privacy, security, and resistance to denial of service, while still allowing the caching of data anywhere, anytime.

Also developing CAD tools for exploring the quantum circuit design space and ultimately designing quantum computers. Current focus on Ion-trap systems.

Massachusetts Institute of Technology — Cambridge, MA

Responsible for the design and implementation of the Alewife multiprocessor. Modified industry-standard microprocessors for rapid context switching and software cache-coherence. Explored tradeoffs in communication styles, such as message passing vs shared memory.

Professional:

University of California at Berkeley — Berkeley, CA

Full Professor of Computer Science	7/10 – Present
Associate Professor of Computer Science	7/03 – 6/10
Assistant Professor of Computer Science	1/98 – 6/03

- Teaching: *computer architecture* and *operating systems* at undergraduate and graduate levels
- Research: Internet-scale systems, OS, compilers, quantum and classical computer architectures

Project Athena, IBM assignment — Cambridge, MA

Systems Developer	6/87 – 1/89

Mounds View School District 621 — Arden Hills, MN

Summer School Instructor.	1984 – 1986

Awards:

- Most Influential Paper. *Intl. Conf. on Arch. Support for Prog Lang and OS* (ASPLOS '18) 3/18
- U.S. News and World Report "People To Watch for 2004" — 12/03
- Diane S. McEntyre Award for Excellence in Teaching — 5/03
- Scientific American 50 (awarded to top 50 visionaries in research, industry, and politics) 11/02
- MoundsView High School Distinguished Alumni Award — 6/01
- Berkeley IT Award for Excellence in Undergraduate CS Teaching — 11/00
- Presidential Early Career Award for Scientists and Engineers (PECASE). — 10/00
- George M. Sprowls Award for best PhD thesis in EECS at MIT. — 7/98
- Best Paper. *Intl. Conf. on Supercomputing (1993)*. — 7/93

Consulting:	**CISCO systems**	**San Jose, CA**
	Network Protocol Design.	01/06 – 12/06
	IBM Research Labs	**San Jose, CA**
	Specialist in Storage and Autonomic Computing.	10/01 – 1/03
	SUN Microsystems	**Menlo Park, CA**
	Specialist in RAS design techniques.	2/00 – 6/01
	CLAM Associates	**Cambridge, MA**
	Development of testing tools for high-availability clustered applications.	10/96 – 5/98
	Intl. Business Machines	**Cambridge, MA**
	Operating Systems/Device Driver Development.	1/89 – 1/93

Membership:	
• IEEE	Spring 1998
• ACM	Spring 1998
• Sigma Xi	Fall 1992
• American Association for the Advancement of Science (AAAS)	Fall 1987
• Tau Beta Pi	Fall 1986
• Sigma Pi Sigma	Fall 1986

Selected Publications:

"FogROS2: An Adaptive Platform for Cloud and Fog Robotics Using ROS 2," Jeffry Ichnowski, Kaiyuan Chen, Karthik Dharmarajan, Simeon Adebola, Michael Danielczuk, Víctor Mayoral-Vilches, Nikhil Jha, Hugo Zhan, Edith LLontop, Derek Xu, John Kubiatowicz, Ion Stoica, Joseph Gonzalez, Ken Goldberg." *IEEE Intl. Conf. on Robotics and Automation* (ICRA), 2023

"FogROS: An Adaptive Framework for Automating Fog Robotics Deployment," Kaiyuan Chen, Yafei Liang, Nikhil Jha, Jeffry Ichnowski, Michael Danielczuk, Joseph Gonzalez, John Kubiatowicz, Ken Goldberg." *IEEE Intl. Conf. on Automation Science and Engineering* (CASE), 2021

"Global Data Plane: A Federated Vision for Secure Data in Edge Computing," Nitesh Mor, Richard Pratt, Eric Allman, Kenneth Lutz, John Kubiatowicz. *IEEE Intl. Conf. on Distributed Computing Systems* (ICDCS), 2019

"A Fog Robotics Approach to Deep Robot Learning: Application to Object Recognition and Grasp Planning in Surface Decluttering," Ajay Kumar Tanwani, Nitesh Mor, John Kubiatowicz, Joseph E. Gonzalez, Ken Goldberg. *IEEE Intl Conf. on Robotics and Automation* (ICRA), 2019

"A Hardware Accelerator for Tracing Garbage Collection," Martin Maas, Krste Asanovic, John Kubiatowicz. *Intl. Symp. on Computer Arch.,* (ISCA), June 2018

"Enabling power-awareness for the Xen hypervisor," Matteo Ferroni, Juan A. Colmenares, Steven A. Hofmeyr, John Kubiatowicz, Marco D. Santambrogio. *SIGBED Rev*, Vol 15, No. 1, pp36-42, June 2018

"MARC: A Resource Consumption Modeling Service for Self-Aware Autonomous Agents," Matteo Ferroni, Andrea Corna, Andrea Damiani, Rolando Brondolin, John Kubiatowicz, Donatella Sciuto, Marco D. Santambrogio. *ACM Trans. on Autonomous and Adaptive Systems* (TAAS), Vol 12, No. 4, Article 21, Jan 2018

"Power Consumption Models for Multi-Tenant Server Infrastructures," Matteo Ferroni, Andrea Corna, Andrea Damiani, Rolando Brondolin, Juan A. Colmenares, Steven A. Hofmeyr, John Kubiatowicz, Marco D. Santambrogio. *Trans. on Arch. and Code Optimization* (TACO), Vol 14, No. 4, Article 38, Dec 2017

"Full-System Simulation of Java Workloads with RISC-V and the Jikes Research Virtual Machine," Martin Maas, Krste Asanovic, John Kubiatowicz. *In the 1st Workshop on Computer Architecture Research with RISC-V* (CARRV '17), Oct 2017

"Return of the Runtimes: Rethinking the Language Runtime System for the Cloud 3.0 Era," Martin Maas, Krste Asanovic, John Kubiatowicz. *In the 16th Workshop on Hot Topics in Operating Systems* (HotOS '17), May 2017

"Enabling power-awareness for the Xen Hypervisor," Matteo Ferroni, Juan A. Colmenares, Steven Hofmeyr, John D. Kubiatowicz, Marco D. Santabrogio. *In the 6th Embedded Operating System Workshop* (EWili'16), Oct 2016

"Grail Quest: A New Proposal for Hardware-assisted Garbage Collection," Martin Maas, Krste Asanovic, John Kubiatowicz. *In the 6th Workshop on Architectures and Systems for Big Data* (ASBD '16), Jun 2016

"Toward a Global Data Infrastructure," Nitesh Mor, Ben Zhang, John Kolb, Douglas S. Chan, Nikhil Goyal, Nicholas Sun, Ken Lutz, Eric Allman, John Wawrzynek, Edward A. Lee, and John Kubiatowicz. *In IEEE Internet Computing*, Vol. 20, No. 3, pp. 54-62, May 2016

"Taurus: A Holistic Language Runtime System for Coordinating Distributed Managed-Language Applications," Martin Maas, Krste Asanovic, Tim Harris, John Kubiatowicz. *In the Intl. Conf. on Arch. Support for Programming Lanugages and Operating Systems*, (ASPLOS '16), Apr 2016

"The Cloud is Not Enough: Saving IoT from the Cloud," Ben Zhang, Nitesh Mor, John Kolb, Nikhil Goyal, Douglas S. Chen, Ken Lutz, Eric Allman, John Wawrzynek, Edward Lee, John Kubiatowicz. *USENIX Workshop on Hot Topics in Cloud Computing* (HotCloud'15), Jul 2015

"Trash Day: Coordinating Garbage Collection in Distributed Systems," Martin Maas, Tim Harris, Krste Asanovic, and John Kubiatowicz. *In the 15th Workshop on Hot Topics in Operating Systems* (HotOS'15), May 2015.

"Bloom Cookies: Web Search Personalization without User Tracking," Nitesh Mor, Oriana Riva, Suman Nath, John Kubiatowicz. *In Symposium on Network and Distributed System Security* (NDSS '15), February 2015.

"The Case for the Holistic Language Runtime System," Martin Maas, Krste Asanovic, Tim Harris, and John Kubiatowicz. *In the Intl. Workshop on Rack-scale Computing* (WRSC'14), April 2014.

"A High-Performance Oblivious RAM Controller on the Convey HC-2ex Heterogenous Computing Platform," Martin Maas, Eric Love, Emil Stefanov, Mohit Tiwari, Elaine Shi, Krste Asanović, John Kubiatowicz, and Dawn Song. *In the Workshop on the Intersections of Computer Architecture and Reconfigurable Logic* (CARL '13), December 2013.

"Chisel-Q: Designing Quantum Circuits with a Scala Embedded Language," Xiao Liu and John Kubiatowicz. *In the 31st IEEE Intl. Conference on Computer Design* (ICCD), October 2013.

"QuRE: The Quantum Resource Estimator Toolbox." Martin Suchara, Arvin Faruque, Ching-Yi Lai, Gerardo Paz, Frederic T. Chong, and John Kubiatowicz. *In the 31st IEEE Intl. Conference on Computer Design* (ICCD), October 2013.

"PHANTOM: Practical Oblivious Computation in a Secure Processor," Martin Maas, Eric Love, Emil Stefanov, Mohit Tiwari, Elaine Shi, Krste Asanovic, John Kubiatowicz, Dawn Song, *In the 20th ACM Conference on Computer and Communications Security* (CCS), November 2013

[Publications Continued]

"Tessellation: Refactoring the OS around Explicit Resource Containers with Continuous Adaptation." Juan A. Colmenares, Gage Eads, Steven Hofmeyr, Sarah Bird, Miquel Moreto, David Chou, Brian Gluzman, Eric Roman, Davide B. Bartolini, Nitesh Mor, Krste Asanovic, and John D. Kubiatowicz *In the Design Automation Conference, Special Session on the Future of Operating Systems for Embedded Systems and Software* (ESS), June 5, 2013

"GPUs as an Opportunity for Offloading Garbage Collection," Martin Maas, Philip Reames, Jeffrey Morlan, Krste Asanovi´c, Anthony D. Joseph, and John Kubiatowicz. *Intl. Symp. on Memory Management* (ISMM), June 2012

"Juggle: addressing extrinsic load imbalances in SPMD applications on multicore computers," Steven Hofmeyr, Juan A. Colmenares, Costin Iancu, and John Kubiatowicz. *Cluster Computing: The Journal of Networks, Software Tools and Applications*, April 2012

"A Soft Real-Time, Parallel GUI Service in Tessellation Many-Core OS," Albert Kim, Juan A. Colmenares, Hilfi Alkaff, and John Kubiatowicz. *Intl. Conf. on Computers and Their Applications* (CATA), March 2012

"Real-Time Musical Applications On An Experimental Operating System for Multi-Core Processors," Juan A. Colmenares, Ian Saxton, Eric Battenberg, Rimas Avizienis, Nils Peters, Krste Asanovic, John D. Kubiatowicz, and David Wessel. *Intl. Computer Music Conf.* (ICMC), 2011

"Juggle: Proactive Load Balancing on Multicore Computers," Steven Hofmeyr, Juan Colmenares, Costin Iancu, and John Kubiatowicz. *High Performance Dist. Computing* (HPDC), June 2011

"Resource Management in the Tessellation Manycore OS," Juan A. Colmenares, Sarah Bird, Henry Cook, Paul Pearce, David Zhu, John Shalf, Steven Hofmeyer, Krste Asanovic and John Kubiatowicz. *In 2nd USENIX Workshop on Hot Topics in Parallelism* (HotPar), June 2010

"A View of the Parallel Computing Landscape," Krste Asanovic, Ras Bodik, James Demmel, Tony Keaveny, Kurt Keutzer, John Kubiatowicz, Nelson Morgan, David A. Patterson, Koushik Sen, John Wawrzynek, David Wessel, Katherine A. Yelick. In *CACM*, Vol 52, No. 10, Oct. 2009, pp 56-67.

"A Fault Tolerant, Area Efficient Architecture for Shor's Factoring Algorithm," Mark Whitney, Nemanja Isailovic, Yatish Patel, and John Kubiatowicz. *Intl. Symp. on Computer Arch.,* (ISCA), June 2009

"Analysis of Photonic Networks for a Chip Multi-Processor Using Scientific Applications," G. Hendry, S. Kamil, A. Biberman, J. Chan, B. Lee, M. Mohiyuddin, A. Jain, K. Bergman, L.P. Carloni, J. Kubiatowicz, L. Oliker, and J. Shalf. *Third Intl. Symp. on Networks-on-Chip* (NOCS), May 2009

"Tessellation: Space-Time Partitioning in a Manycore Client OS," Rose Liu, Kevin Klues, Sarah Bird, Steven Hofmeyr, Krste Asonovic, and John Kubiatowicz. *First USENIX Workshop on Hot Topics in Parallelism* (HotPar '09), March 2009

"Tiered Fault Tolerance for Long-Term Integrity," Byung-Gon Chun, Petros Maniatis, Scott Shenker, and John Kubiatowicz. *USENIX Conf. on File and Storage Tech.* (FAST '09), Feb 2009.

"Performance and Energy Comparison of Electrical and Hybrid Photonic Networks for CMPs," Shoaib Kamil, Ankit Jain, John Shalf, and John Kubiatowicz. *Workshop on High Performance Embedded Computing* (HPEC) Sept. 2008

"Running a Quantum Circuit at the Speed of Data," Nemanja Isailovic, Mark Whitney, Yatish Patel and John Kubiatowicz. *Intl. Symp. on Computer Arch,* (ISCA), June 2008

"Attested Append-Only Memory: Making Adversaries Stick to Their Word," Byung-Gon Chun, Petros Maniatis, Scott Shenker, and John Kubiatowicz. *Symp. on OS Principles* (SOSP), Oct 2007
[Publications Continued]

"Automated Generation of Layout and Control for Quantum Circuits," Mark Whitney, Nemanja Isailovic, Yatish Patel, and John Kubiatowicz. *ACM Intl. Conf. on Comp. Frontiers,* May 2007

"Antiquity: Exploiting a Secure Log for Wide-Area Distributed Storage," Hakim Weatherspoon, Patrick Eaton, Byung-Gon Chun, and John Kubiatowicz. *ACM European Conf. on Computer Systems* (EuroSys '07), March 2007

"Interconnection Networks for Scalable Quantum Computers," Nemanja Isailovic, Yatish Patel, Mark Whitney, and John Kubiatowicz. *Intl. Symp. on Computer Arch.* (ISCA), June 2006

"Efficient Replica Maintenance for Distributed Storage Systems," Byung-Gon Chun, Frank Dabek, Andreas Haeberlen, Emil Sit, Hakim Weatherspoon, M. Frans Kaashoek, John Kubiatowicz, and Robert Morris. *USENIX Symp. on Networked Systems Design and Impl.* (NSDI '06), May 2006.

"Proactive Replication for Data Durability," Emil Sit, Andreas Haeberlen, Frank Dabek, Byung-Gon Chun, Hakim Weatherspoon, Robert Morris, M. Frans Kaashoek, and John Kubiatowicz. *Intl. Workshop on Peer-to-Peer Systems* (IPTPS), Feb. 2006.

"ChunkCast: An Anycast Service for Large Content Distribution," Byung-Gon Chun, Peter Wu, Hakim Weatherspoon, and John Kubiatowicz. *Workshop on Peer-to-Peer Sys.* (IPTPS), Feb. 2006

"Efficiently Binding Data to Owners in Distributed Content-Addressable Storage Systems," Patrick Eaton, Hakim Weatherspoon, and John Kubiatowicz. *Intl. IEEE Security in Storage Workshop* (IEEE SISW 2005), Dec. 2005

"Fixing the Embarrassing Slowness of OpenDHT on PlanetLab," Sean Rhea, Byung-Gon Chun, John Kubiatowicz, and Scott Shenker. *Workshop on Real, Large Dist. Sys.* (WORLDS), Dec. 2005

"OpenDHT: A Public DHT Service and Its Uses," Sean Rhea, Brighten Godfrey, Brad Karp, John Kubiatowicz, Sylvia Ratnasamy, Scott Shenker, Ion Stoica, and Harlan Yu. *Conf. of the Special Interest Group on Data Communication* (SIGCOMM), Aug. 2005

"Impact of Neighbor Selection on Performance and Resilience of Structured P2P Networks", Byung-Gon Chun, Ben Zhao, and John Kubiatowicz. *Workshop on Peer-to-Peer Sys.* (IPTPS), Feb. 2005

"Optimizing Robustness while Generating Shared Secret Safe Primes," Emil Ong and John Kubiatowicz. *Public Key Cryptography*, 2005, p. 120-137, January 2005

"Improving Bandwidth Efficiency of Peer-to-Peer Storage", Patrick Eaton, Emil Ong, and John Kubiatowicz. *IEEE Intl. Conf. on Peer-to-Peer Computing* (IEEE P2P '04), Aug. 2004

"Selfish Caching in Distributed Systems: A Game-Theoretic Analysis," Byung-Gon Chun, Kamalika Chaudhuri, Hoeteck Wee, Marco Barreno, Christos H. Papadimitriou, and John Kubiatowicz. *ACM Symp. on Principles of Distributed Computing*, July 2004

"Object Location in Realistic Networks," Kirsten Hildrum, Robert Krauthgamer, and John D. Kubiatowicz. *ACM Symp. on Parallel Algorithms and Architectures* (SPAA), June 2004

"Handling Churn in a DHT," Sean Rhea, Dennis Geels, Timothy Roscoe, and John Kubiatowicz. *USENIX Annual Technical Conf.,* June 2004

"Characterizing Selfishly Constructed Overlay Routing Networks," Byung-Gon Chun, Rodrigo Fonseca, Ion Stoica, and John Kubiatowicz. *IEEE Intl. Conf. on Computer Communications* (INFOCOMM), March 2004

"Distributed Object Location in a Dynamic Network," Kirsten Hildrum, John D. Kubiatowicz, Satish Rao, and Ben Y. Zhao. *Theory of Computing Systems*, Issue: Online First, March 15, 2004

[Publications Continued]

"Datapath and Control for Quantum Wires," Nemanja Isailovic, Mark Whitney, Yatish Patel, John Kubiatowicz, Dean Copsey, Frederic T. Chong, Isaac L. Chuang, and Mark Oskin. *Transactions on Architecture and Code Optimization* (TACO), Vol 1, No. 1, pp 34-61, March 2004

"Rapid Mobility via Type Indirection", Ben Y. Zhao, Ling Huang, Anthony Joseph, and John Kubiatowicz. *Intl. Workshop on Peer-to-Peer Systems* (IPTPS), Feb. 2004

"Tapestry: A Resilient Global-Scale Overlay for Service Deployment," Ben Y. Zhao, Ling Huang, Jeremy Stribling, Sean C. Rhea, Anthony D. Joseph, and John Kubiatowicz. *IEEE Journal on Selected Areas in Communications*, Vol 22, No. 1, January 2004

"A Note on Finding the Nearest Neighbor in Growth-Restricted Metrics," Kirsten Hildrum, John Kubiatowicz, Sean Ma, and Satish Rao. *Symp. on Discrete Algorithms (SODA)*, January 2004

"Exploiting Prediction To Reduce Power on Buses," Victor Wen, Mark Whitney, Yatish Patel and John Kubiatowicz. *Intl. Symp. on High Performance Computer Arch.* (HPCA 2004)

"Toward a Scalable, Silicon-Based Quantum Computing Architecture," Dean Copsey, Mark Oskin, Francois Impens, Tzvetan Metodiev, Andrew Cros, Frederic T. Chong, Isaac L, Chuang, and John Kubiatowicz. *Journal of Selected Topics in Quantum Electronics* Vol 9, No. 6, pp 1552-1569. Nov./Dec. 2003.

"Exploiting Routing Redundancy via Structured Peer-to-Peer Overlays," Ben Y. Zhao, Ling Huang, Jeremy Stribling, Anthony D. Joseph, and John Kubiatowicz. *Intl. Conf. on Network Protocols (ICNP)*, Nov. 2003

"Asymptotically Efficient Approaches to Fault-Tolerance in Peer-to-Peer Networks," KIrsten Hildrum And John Kubiatowicz. *Intl. Symp. on Distributed Computing*, Oct. 2003

"Can we build Classical Control Circuits for Silicon Quantum Computers?," Mark Whitney, Yatish Patel, Nemanja Isailovic, and John Kubiatowicz. *Second Workshop in Non-Silicon Computing (NSC2)*, June 2003.

"Building Quantum Wires: The Long and the Short of it," Mark Oskin, Frederic T. Chong, Isaac L. Chuang, John Kubiatowicz. In *Intl. Symp. on Computer Arch.* (ISCA), June 2003.

"The Effect of Communication Costs in Solid-State Quantum Computing Architectures," Dean Copsey, Mark Oskin, Tzvetan Metodiev, Frederic T. Chong, Isaac Chuang, and John Kubiatowicz. *ACM Symp. on Parallelism in Algorithms and Architectures* (SPAA 2003)

"Approximate Object Location and Spam Filtering on Peer-to-Peer Systems," Feng Zhou, Li Zhuang, Ben Y. Zhao, Ling Huang, Anthony Joseph and John Kubiatowicz. In *ACM/IFIP/USENIX Intl. Middleware Conference* (Middleware 2003), June 2003.

"Structured Peer-to-Peer Overlays Need Application-Driven Benchmarks," Sean Rhea, Timothy Roscoe, and John Kubiatowicz. *Workshop on Peer-to-Peer Sys.* (IPTPS), Feb. 2003.

"Towards a Common API for Structured Peer-to-Peer Overlays," Frank Dabek, Ben Zhao, Peter Druschel, John Kubiatowicz, and Ion Stoica. *Workshop on Peer-to-Peer Sys.* (IPTPS), Feb. 2003.

"Extracting Guarantees from Chaos," John Kubiatowicz. In *CACM*, Vol 46, No. 2, Feb. 2003.

"Pond: the OceanStore Prototype," Sean Rhea, Patrick Eaton, Dennis Geels, Hakim Weatherspoon, Ben Zhao, and John Kubiatowicz. In *USENIX Conf. on File and Storage Technologies* (FAST '03), March 2003.

"Distributed Object Location in a Dynamic Network", Kirsten Hildrum, John D. Kubiatowicz, Satish Rao, and Ben Y. Zhao. In *ACM Symp. on Parallel Alg. and Arch.*(SPAA), Aug. 2002.

"SCAN: A Dynamic, Scalable, and Efficient Content Distribution Network", In *Intl. Conf. Pervasive Computing*, Aug. 2002.

[Publications Continued]

"Probabilistic Location and Routing" Sean Rhea and John Kubiatowicz. In *Annual Joint Conf. of IEEE Computer and Communications Societies (INFOCOM)*, June 2002.

"Brocade: Landmark Routing on Overlay Networks," Ben Y. Zhao, Yitao Duan, Ling Huang, Anthony Joseph, and John Kubiatowicz. In *Workshop on Peer-to-Peer Sys.* (IPTPS), March 2002.

"The Worldwide Computer," David Anderson and John Kubiatowicz. In *Scientific American*. vol 286, no. 3, March 2002

"Maintenance-Free Global Data Storage" Sean Rhea, Chris Wells, Patrick Eaton, Dennis Geels, Ben Zhao, Hakim Weatherspoon, and John Kubiatowicz. In *IEEE Internet Computing*, Vol 5, No. 5. Sept./Oct. 2001.

"Bayeux: An Architecture for Wide-Area, Fault-Tolerant Data Dissemination" Shelley Zhuang, Ben Zhao, Anthony Joseph, Randy Katz, and John Kubiatowicz. In *Workshop on Network and Operating Systems Support for Digital Audio and Video* (NOSSDAV), June 2001.

"Erasure Coding vs. Replication: A Quantitative Comparison," Hakim Weatherspoon and John Kubiatowicz. In *Intl. Workshop on Peer-to-Peer Systems* (IPTPS), March 2002.

"OceanStore: An architecture for Global-Scale Persistent Storage", John Kubiatowicz, David Bindel, Yan Chen, Steven Czerwinski, Patrick Eaton, Dennis Geels, Ramakrishna Gummadi, Sean Rhea, Hakim Weatherspoon, Westley Weimer, Chris Wells, and Ben Zhao. *Intl. Conf. on Architectural Support for Prog. Languages and Operating Systems* (ASPLOS), Nov. 2000.
Won *"Most Influential Paper"* in ASPLOS 2018.

"Multigrain Shared Memory" Donald Yeung, John Kubiatowicz, and Anant Agarwal. In *ACM Transactions on Computer Systems*. Vol. 18, No. 2, pages 154-196. May 2000.

"NinjaMail: The Design of a High-Performance Clustered, Distributed E-Mail System," J.R. von Behren, S. Czerwinski, A. D. Joseph, E. A. Brewer, and J. Kubiatowicz. In *Intl. Workshop on Parallel Processing 2000*, Aug. 2000.

"ISTORE: Introspective Storage for Data-intensive Network Services." Aaron Brown, David Oppenheimer, Kim Keeton, Randi Thomas, John Kubiatowicz, and David A. Patterson. In *Workshop on Hot topics in Operating Systems* (HotOS-VII), March 1999.

"The MIT Alewife Machine." *Proc. of the IEEE*, vol 87 (no. 3), March 1999.

"Exploiting Two-Case Delivery for Fast Protected Messaging." Ken Mackenzie, John Kubiatowicz, Matthew Frank, Walter Lee, Victor Lee, Anant Agarwal, and Franz Kaashoek. In *Intl. Symp. on High Performance Computer Architecture* (HPCA), Feb. 1998.

"The Sensitivity of Communication Mechanisms to Bandwidth and Latency." Rajeev Barua, Frederik T. Chong, Fredrik Dahlgren, John Kubiatowicz, and Anant Agarwal. In *Intl. Symp. on High Performance Computer Architecture* (HPCA), Feb. 1998.

"Application Performance on the MIT Alewife Machine." Frederic T. Chong, Beng-Hong Lim, Ricardo Bianchini, John Kubiatowicz, and Anant Agarwal. In *IEEE Computer*, Dec. 1996.

"MGS: A Multi-Grain Shared Memory System." Donald Yeung, John Kubiatowicz, and Anant Agarwal. In the *Intl. Symp. on Computer Arch.* (ISCA), May 1996

"Remote Queues: Exposing Message Queues for Optimization and Atomicity." Eric A. Brewer, Frederic T. Chong, Lok T. Liu, Shamik D. Sharma, and John Kubiatowicz. In the *Symp. on Parallel Architectures and Algorithms*, July 1995.

"The MIT Alewife Machine: Architecture and Performance." Anant Agarwal, Ricardo Bianchini, David Chaiken, Kirk Johnson, David Kranz, John Kubiatowicz, Beng-Hong Lim, Ken Mackenzie, and Donald Yeung. In the *Intl. Symp. on Computer Arch.*, June 1995.
[Publications Continued]

"The Alewife CMMU: Addressing the Multiprocessor Communications Gap." John Kubiatowicz, David Chaiken, and Anant Agarwal. Extended Abstract. Presented at *Hot Chips VI*. Aug. 1994.

"The Anatomy of a Message in the Alewife Multiprocessor." John Kubiatowicz and Anant Agarwal. In the *Intl. Conf. on Supercomputing,* July 1993 as an Invited Paper.

"SPARCLE: An Evolutionary Processor Design for Large-Scale Multiprocessors." Anant Agarwal, John Kubiatowicz, David Kranz, Beng-Hong Lim, Donald Yeung, Godfrey D'Souza, and Mike Parkin. In *IEEE Micro,* June 1993.

"Integrating Message-Passing and Shared-Memory: Early Experience." David Kranz, Kirk Johnson, Anant Agarwal, John Kubiatowicz, and Beng-Hong Lim. In the *Conf. on Principles and Practice of Parallel Programming,* May 1993.

"Closing the Window of Vulnerability in Multiphase Memory Transactions" John Kubiatowicz, David Chaiken, and Anant Agarwal. In the *Intl. Conf. on Architectural Support for Programming Languages and Operating Systems (ASPLOS),* Oct. 1992.

"LimitLESS Directories: A Scalable Cache Coherence Scheme." David Chaiken, John Kubiatowicz, and Anant Agarwal. In the *Fourth Intl. Conf. on Architectural Support for Programming Languages and Operating Systems (ASPLOS),* April 1991.

"APRIL: A Processor Architecture for Multiprocessing." Anant Agarwal, Beng-Hong Lim, David A. Kranz, and John Kubiatowicz. In the *17th Intl. Symp. on Computer Arch.,* June 1990.

Selected Talks: "Global Data Plane: A Federated Vision for Secure Data in Edge Computing," *IEEE Intl. Conf. on Distributed Computing Systems* (ICDCS), 2019

"Tessellation: Refactoring the OS around Explicit Resource Containers with Continuous Adaptation," *Design Automation Conference* (DAC), Austin, Texas, June 2013

"Architecting Systems Software in a ManyCore World," *Cornell Systems Seminar*, Cornell University, Nov. 2009

"Optimizing the Layout and Error Properties of Quantum Circuits," *Seminar Series*, Caltech Institute for Quantum Information, Nov. 2009

"Cloud Storage is the Future: Lessons from the OceanStore Project," *CISCO Cloud Computing Research Symposium* (C3RS), Cisco Systems, Nov. 2008

"OceanStore: Toward Global-Scale, Self-Repairing, Secure and Persistent Storage", *Distinguished Lecture Series*, University of Maryland, Oct. 2002.

"Opportunities for Continuous Tuning in a Global Scale File System", *IBM Almaden Institute on Autonomic Computing*, IBM Almaden Research Institute, April 2002

"OceanStore: An Architecture for Global-Scale Persistent Storage". *ASPLOS IX*, Nov. 2000

"The MIT Alewife Machine: Architecture and Performance." *International Symposium on Computer Architecture* (ISCA), June 1995

"The Alewife CMMU: Addressing the Multiprocessor Communications Gap." *Hotchips VI,* Aug. 1994, Stanford, CA.

"Anatomy of a Message in the Alewife Multiprocessor" *ICS,* July 1993, Tokyo. Companion talk given at Fujitsu Laboratories in Kawasaki.

"Closing the Window of Vulnerability in Multiphase Memory Transactions" *ASPLOS V*, Oct. 1992