

Curriculum Vitae

Kai Li

Department of Computer Science
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Princeton University
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Education

- Ph.D. 1986, Yale University. Yale Fellowships.
Dissertation: *Shared Virtual Memory on Loosely Coupled Multiprocessors*.
Advisers: Paul Hudak and Alan Perlis.
- M.S. 1983, M.Phil. 1984, Yale University.
- M.S. 1981, University of Science and Technology of China, Peking, P.R.C.
- B.S. 1977, Jilin University, Changchun, P.R.C. Graduate with high honors.

Research Interests

Parallel and distributed systems, operating systems, storage systems, computer architecture, large-scale data analysis, and knowledge base construction.

Full Time Employments

- Paul M. Wythes '55, P'86 and Marcia R. Wythes P'86 Professor, Department of Computer Science, Princeton University, since 2009.
- Charles Fitzmorris Professor, Department of Computer Science, Princeton University, 2002-2009.
- Chief Scientists, Data Domain, Inc. 2002.
- Chief Executive Officer, Data Domain, Inc. 2001-2002.
- Professor, Department of Computer Science, Princeton University, 1995-2001.
- Associate professor, Department of Computer Science, Princeton University, 1992-1995.
- Assistant professor, Department of Computer Science, Princeton University, 1986-1992.

Visiting and Consulting

- Consulting Chief Scientist, Data Domain, Inc., since 2002-2009.
- EMC Visiting Professor, Tsinghua University, 2008.
- Honorary visiting professor, Tsinghua University, 2005-2008.
- Honorary visiting professor, Institute of Computing Technology, Chinese Academy of Sciences, since 2005.
- Consulting Chief Scientist, Data Domain, Inc. 2003-2009.
- Entrepreneur-In-Resident, New Enterprise Associates, fall 2001.
- Honorary Visiting Professor, Institute of Software, Academy of Sciences of China, since 2001.
- Visiting Professor, Department of Computer Science, Stanford University, 2000.
- Visiting Professor, Department of Computer Science, Stanford University, 1996.
- Consultant, Intel Microcomputer Research Labs, since 1996.
- Consultant, AT&T Bell Laboratories, summer 1995.
- Consultant, NEC Research Institute, since 1994.
- Consultant, Matsushita Information Technology Laboratory, 1991-94.
- Consultant, DEC Systems Research Center, 1989.
- Consultant, Intel Supercomputer Systems Division, 1987.

- Visiting assistant professor, Department of Electrical Engineering and Department of Computer Science, University of Toronto, Fall 1988.
- Visiting scientist, DEC Systems Research Center, summer 1987 and 1988.

Honors and Awards

- Member of Chinese Academy of Engineering, 2017.
- 10-year best paper award, *Very Large Data Bases*, 2017.
- Member of National Academy of Engineering, 2012.
- Member of Washington State Academy of Sciences, 2012.
- ACM SIGOPS Hall of Fame Award, 2012.
- Distinguished Achievement Award, Chinese Institute of Engineers, 2012.
- IEEE Fellow, 2011.
- Overseas Outstanding Contribution Award, China Computer Federation, 2008.
- Commendation List for Outstanding Teaching, School of Engineering and Applied Science, Princeton University, 2006.
- 50 most-influential papers in *20 Years of Programming Language Design and Implementation – A Selection (1979-1999)*, 2004.
- 43 most-influential papers in *25 Years of the International Symposia on Computer Architecture*. 1998.
- IBM Partnership Award, 1998 and 2000.
- ACM Fellow, 1998.
- *ACM Measurement and Modeling of Computer Systems* Best Paper Award, ACM, 1995.
- Excellence in Teaching Award, Undergraduate Engineering Council, Princeton University, 1994.

Boards

- International Review Panel, Electrical Engineering and Computer Science, Peking University, 2017.
- Advisory Council Member, Computer Science, Tsinghua University, 2017.
- Director, Board of Directors, Moqi, Inc., since 2017.
- Technical advisory board member, DELL/EMC, since 2017.
- Advisory Board Chair, Jilin University, China, since 2015.
- Advisory Board Member, Open Innovation Center, Samsung Semiconductor, Inc. since 2012-2016.
- Advisory board member, The Technion Computing Engineering Center, Technion Israel Institute of Technology, 2011-2012.
- Technical advisory board member, Inphi Corporation, since 2010-2011.
- Technical advisory board member, EMC Corporation, 2009-2015.
- Advisory board chair, Intel Beijing Research Lab, 2009-2014.
- Director, Board of Directors, Pattern Insight, Inc. 2007-2012.
- Advisory board member, School of Computer and Communication Sciences (I&C), Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland, since 2004.
- Advisory board member, Computer Science Department, Hong Kong University of Science and Technology, Hong Kong, 2004-2007.
- Advisory board member, TeraGrid Technical Advisory Board, Argonne National Labs, NCSA and UCSD Supercomputing Center, 2002-2004.
- Director, Board of Directors, Data Domain, Inc., 2001-2009.
- Advisory board member, Board of Advisory council, Intel Microcomputer Technology Labs, 2000-2004.
- Advisory board member, DOE Plasma Sciences Advanced Computing Institute (PSACI), 1999-2009.

University Services

- Member, Princeton Entrepreneurship Council, since 2016

- Member, Faculty Advisory Committee on Athletics, 2016-17
- Member, Wellness and Recreation Committee, 2014-15
- Member, Taskforce on Entrepreneurship Committee, 2014-15
- Member, Faculty Advisory Committee on Athletics, 2012-13, and 2016-2017
- Member, Committee on Internationalization, 2007.
- Chair, Advisory Committee on Athletics, Princeton University, 2006-2009.
- Member, Award Nomination Committee, School of Engineering and Applied Science, Princeton University, since 2006-2008.
- Member, Advisory Committee on Athletics, Princeton University, 2005-2006.
- Member, University Research Board, Princeton University, 2004-2008.
- Executive committee member, Princeton Institute for Computational Sciences, since 2003.
- Member, Council of Princeton University Community, 1998-2000.
- Member, Fellowship committee, School of Engineering and Applied Science, Princeton University, 1997, 1998, and 2003.

Professional Services

- Member, Science Committee, Future Science Prize, since 2015
 - Member, Qiu-Shi Science Prize, 2017.
 - Chair, ACM SIGOPS Mark Weiser Award committee, 2010.
 - Member, ACM SIGOPS Mark Weiser Award committee, 2008-2009.
 - Panel Member, Research Assessment Exercise (RAE), University Grants Committee, Hong Kong, 2006.
 - Member, Committee of Visitors, National Science Foundation, 2005.
 - Editorial board member, *International Journal of Parallel Programming*, since 1993.
 - Associate Editor, *IEEE Transactions on Parallel and Distributed Systems*, 1994-97.
 - Guest Editor, Special Issue on "Large-Format Displays," *IEEE Computer Graphics & Applications*. July 2000.
 - Editorial board member, *Journal of Software*, since 2001.
 - Editorial board member, *International Journal of Security and Networks*, since 2005.
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- Program committee member, USENIX 13th Conference on File and Storage Technologies, 2013, 2016.
 - Program committee member, ACM International Conference on Multimedia Retrieval, 2012.
 - Program committee member, ACM/IEEE International Symposium of Computer Architecture, 2012.
 - Program committee member, ACM Workshop of Management of Big Data Systems, 2012.
 - Program committee member, ACM/IEEE International Symposium of Computer Architecture, 2011.
 - Program committee member, ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems, 2010.
 - Program committee member, ACM SIGMM the 11th International Conference on Multimedia Information Retrieval, 2010.
 - Co-general chair, ACM/IEEE International Symposium of Computer Architecture, 2008.
 - Program committee member, IEEE International Symposium on High Performance Computer Architecture, 2008.
 - Program committee member, ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems, 2007.
 - Program committee member, ACM SIGOS Eurosys Conference, 2007.
 - Program committee member, ACM Workshop on Continuous Archival and Retrieval of Personal Experiences, 2006.
 - Program committee member, IEEE International Symposium on High Performance Computer Architecture, 2006.

- Program committee member, IEEE International Parallel and Distributed Processing Symposium, 2006.
- Program committee member, ACM International Conference on Computing Frontiers, 2006.
- Co-general chair, IEEE High Performance Computing Asia, 2005.
- Program committee member, USENIX Conference on File And Storage Technology (FAST), 2005.
- Program committee member, ACM Workshop on Continuous Archival and Retrieval of Personal Experiences, 2005.
- Program committee member, IEEE Workshop on Remote Direct Memory Access, 2005.
- Co-program committee chair, ACM/IEEE Symposium on Architecture for Networking and Communications Systems, 2005.
- Program committee member, ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems, 2005.
- Steering committee member, ACM/IEEE International Symposium of Computer Architecture, 2004.
- Program committee member, ACM Workshop on Continuous Archival and Retrieval of Personal Experiences, 2004.
- Program committee member, IEEE Workshop on Remote Direct Memory Access, 2004.
- Program committee chair, ACM/IEEE International Symposium of Computer Architecture, 2003.
- Program committee vice chair, ACM Supercomputing conference, 2002
- Program committee member, ACM International Conference on Architectural Support for Operating Systems and Programming Languages, 2000.
- Program committee member, ACM Supercomputing Conference, 2000.
- Program committee member, ACM International Conference on Supercomputing, 2000.
- Program committee chair, IEEE High-Performance Computer Architecture, 2000.
- Program committee member, ACM/IEEE International Symposium of Computer Architecture, 1999.
- Program committee member, ACM International Conference on Supercomputing, 1999.
- Program committee member, ACM SIGOS/USENIX Symposium on Operating Systems Design and Implementation, 1999.
- Program committee member, ACM Symposium on Principles of Distributed Computing, 1998.
- Program committee member, ACM Symposium on Parallel Algorithms and Architectures, 1998.
- Program committee Vice-Chair, International Conference on Parallel Processing, 1998.
- Program committee member, ACM SIGOS Symposium on Principles of Operating Systems, 1997.
- Program committee member, ACM Supercomputing conference, 1997.
- Program committee member, IEEE Hot Interconnects V, 1997.
- Program committee member, ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems, 1997.
- Program committee Vice-Chair, IEEE Symposium on Parallel and Distributed Processing. 1997.
- Program committee member, IEEE International Conference on Massively Parallel Processing using Optical Interconnections. 1996.
- Program committee Co-Chair, IEEE Hot Interconnects IV, 1996.
- Program committee member, IEEE Symposium on Parallel and Distributed Processing. 1996.
- Program committee member, IEEE Symposium on High Performance Computer Architecture, 1996.
- Program committee member, IEEE Hot Interconnects III, 1995.
- Program committee member, ACM Symposium on Parallel Algorithms and Architectures, 1995.
- Program committee member, ACM SIGOS Workshop on Hot Topics of Operating Systems, 1995.
- Program committee member, International Conference of Parallel Processing, 1995.
- Program committee member, IEEE International Parallel Processing Symposium, 1994.
- Program committee member, ACM Symposium on Principles of Distributed Computing, 1993.
- Program committee member, ACM/IEEE International Symposium on Computer Architecture, 1993.
- Program committee member, IEEE International Conference on Distributed Computing Systems, 1993.
- Program committee member, ACM SIGOS Symposium on Principles of Operating Systems, 1993.

- Program committee member, ACM/IEEE International Symposium on Computer Architecture, 1992.

Ph.D. graduates

- Mark Greenstreet. Professor at University of British Columbia.
Thesis: *STARI: A Technique for High-Bandwidth Communication*, 1993.
- James Plank. Professor at University of Tennessee.
Thesis: *Efficient Checkpointing on MIMD Architectures*, 1993.
- Karin Petersen-Flynn. PCG Capital Partners.
Thesis: *Operating Systems Support for Modern Memory Hierarchies*, 1993.
- Pei Cao. Architect at Google Inc and Adjunct Professor at Stanford University.
Thesis: *Application-Controlled File Caching and Prefetching*, 1996.
- Matthias Blumrich. Research Staff at IBM T.J. Watson Research Center..
Thesis: *Network Interface for Protected, User-Level Communication*, 1996.
- Stefanos N. Damianakis. CEO, Netrics, Inc.
Thesis: *Efficient Connection-Oriented Communication on High-Performance Networks*. 1998.
- Liviu Iftode. Professor at Rutgers University.
Thesis: *Home-Based Shared Virtual Memory*, 1998.
- Bin Wei. Research Staff at AT&T Research Lab.
Thesis: *A Multiple-Port Distributed Frame Buffer on Multicomputers*, 1998.
- Yuanyuan Zhou. Qualcomm Professor at University of California at San Diego.
Thesis: *Memory Management for Networked Servers*, 2000.
- Yuqun Chen. Research Staff at Microsoft Research.
Thesis: *Building A Scalable High-Resolution Display Wall*, 2000.
- Sanjeev Kumar. Facebook, Inc.
Thesis: *ESP: A Language for Programmable Devices*, 2002.
- Han Chen. Research Staff at IBM T. J. Watson Research Center.
Thesis: *Scalable and Ultra-High Resolution MPEG Video Delivery on Tiled Displays*. 2003.
- Qin (Christine) Lv. Assistant Professor at University of Colorado.
Thesis: *Similarity Search for Large-Scale Image Datasets*. 2006.
- Zhiyan (Cathy) Liu. Technical Staff at Google, Inc.
Thesis: *Scalable Isosurface Visualization*. May 2008.
- Matthew Hibbs (co-advised with Prof. Olga Troyanskaya). The Jackson Laboratory.
Thesis: *Analysis and Visualization of Large-Scale Gene Expression Microarray Compendia*, 2007.
- Junwen Lai (co-advised with Dr. Randy Wang). D.E. Shaw.
Thesis: *Virtualizing Network File Systems*, 2008.
- Christian Bienia. Technical Staff at Google Inc.
Thesis: *Benchmarking Modern Multiprocessors*, 2010.
- William Josephson.
Thesis: *A Direct-Access File System for a New Generation of Flash Memory*, 2011.
- Wei Dong.
Thesis: *High-Dimensional Similarity Search for Large Datasets*, 2011.
- Zhe Wang.
Thesis: *Similarity Search with Multimodal Data*, 2011.
- Jia Deng (co-advised with Prof. Fei-fei Li).
Thesis: *Large Scale Visual Recognition*, 2012.
- Yida Wang.
Thesis: *Large-scale analyses of functional interactions in the human brain*. 2016.
- Qian Zhu (co-advised with Prof. Olga Troyanskaya).

Recent Keynote/Distinguished Lectures

- Keynote (with Jonathan Cohen), “Understanding the Human Brain: A Computational Challenge of Truly Cosmic Proportions,” Intel HPC Developer Conference. November 2016.
- Distinguished lecture, “Disruptive Innovation: Data Domain Experience,” Jonsson School's 30th Anniversary Distinguished Lecture Series. University of Texas at Dallas. October 2016.
- Keynote, “Parallel Computing for Analyzing Functional Interactions of the Human Brain,” 11th Conference on Advanced Computer Architecture. August 2016.
- Keynote, “Disruptive Research and Innovation,” 30th IEEE International Parallel and Distributed Processing Symposium (IPDPS). May 2016.
- Keynote, “A Real-Time, Closed Loop fMRI Data Analysis System for Neuroscience Experiments,” Intel HPC Developer Conference, November 2015.
- Keynote, “Deduplication Storage Systems: Reducing Space and Energy,” Frontiers in Energy-Efficient Computing and Applications. September 2015.
- Distinguished lecture, “Disruptive Research and Innovation,” Future Forum, Beijing China, June 2015.
- Distinguished lecture, “How to Succeed in Research and Innovation,” School of Computer Science and Technologies, Jilin University, China, September 2014.
- Distinguished lecture, “Disruptive Innovation: Data Domain Experience,” Department of Computer Science, University of Illinois at Urbana-Champaign, October 2013.
- Distinguished Lecture, “Dual of Research and Innovation,” Department of Computer Science, Ohio State University, April 2012.
- Keynote, “Dual of Research and Innovation,” Forum of Computer Science Department Heads, Wuhan, August 2011.
- Keynote, “Challenges in Building A Deduplication Storage System,” The 2nd ACM SIGOPS Asia-Pacific Workshop on Systems (APSys 2011), Shanghai, China, July 2011.
- Keynote, “Challenges in Building A Commercial Deduplication Storage System,” The 4th Annual International Systems and Storage Conference, Haifa, Israel, May 2011.
- Distinguished lecture, “Building a Commercial Deduplication Storage System,” Department of Computer Science, Purdue University, November 2010.
- Distinguished lecture, “Building a Commercial Deduplication Storage System,” Microsoft Research Silicon Valley, July 2010.
- Distinguished lecture, “Deduplication Storage System,” Department of Computer Science, Wayne State University, March 2009.
- Keynote, “Deduplication Storage System,” Annual Conference of China Computer Federation, June 2008.
- Distinguished lecture, “A Tapeless World Can Be Inexpensive,” School of Computer Science, University of Illinois at Urbana Champaign, April 2007.
- Keynote speech, “Next-Generation Data Protection: Progress and Challenges,” 50th Anniversary of Institute of Computing Technology, Chinese Academy of Sciences, China, October 2006.
- Distinguished lecture, “Content-Based Similarity Search,” Tsinghua University, China, December 2006.
- Distinguished lecture, “Content-Based Similarity Search,” Institute of Computing Technology, Chinese Academy of Sciences, China, October 2005.
- Distinguished lecture, “Princeton Scalable Display Wall,” Zhongshan University, China, January 2005.

- Distinguished lecture, "Building and Using A Scalable Display Wall," University of Oslo, September 2001.
- Distinguished lecture, "Building and Using A Scalable Display Wall," University of Tromso, September 2001.
- Keynote speech, "Challenges and Early Experiences in Building and Using A Scalable Display Wall," IEEE Parallel Visualization and Graphics Symposium, October 1999.
- Distinguished Lecture, "Inexpensive Visual Computing," Department of Computer Science, University of Illinois at Urbana-Champaign, October 1999.
- Distinguished lecture, "Inexpensive Visual Computing," Department of Electrical Engineering, University of Toronto, September 1999.
- Distinguished lecture, "Inexpensive Visual Computing," Department of Computer Science, University of Chicago, March 1999.
- Distinguished lecture, "Inexpensive Visual Computing," Department of Computer Science, University of Tennessee, February 1999.

Recent Grants

- Decoding Mental Representations of Cognitive Control from Brain Imaging Data. Co-PI (PI: Jonathan Cohen). Intel Corporation. \$2,041,200. 2015 – 2018.
- Developing and deploying transformative statistical methodologies for personalized medicine. co-PI (PI: Barbara Engelhardt). \$150,000. Princeton Helen Shirley Hunt Fund. 2016-2017.
- Optimizing deep learning for high-dimensional image data for Knights Landing Xeon Phi. Intel Parallel Computing Center grant. PI (co-PI: Sebastian Seung). Intel Corporation. \$450,000. 2015-2017.
- Deep learning for Synapse Detection in 3D Brain Images. PI (Co-PI: Sebastian Seung). Princeton Keating Fund. \$100,000. 2014.
- Major Research Infrastructure, \$565,000. Co-PI (PI: Jonathan Cohen), NSF 2012-2015.
- Intel Science and Technology Center on Cloud Computing, Princeton PI (with M. Freeman and M. Martonosi), \$1,200,000. 2011-2016.
- Context-Sensitive Search of Human Expression Compendia, \$1,300,000. Co-PI (PI: Olga Trayanskaya). 2011-2014.
- Research in Content-Based Search, EMC Corporation, PI, \$200,000. 2012
- Research in Content-Based Search, \$50,000. PI, Lightspeed Ventures, 2011.
- Android-Based Projects for OS Courses. \$40,000. Google, Inc., PI. 2009.
- Research in Content-Based Search, \$300,000. PI, NEA, 2008-2010.
- Research in Content-Based Search, \$300,000. PI, Lightspeed Ventures, 2008-2010.
- Efficient Content-Based Similarity Search. Google, Inc. \$120,000. PI (Co-PI: Charikar). 2008.
- Media Mining Toolkit and Simulation Package for Many-Core Processors. \$55,900. PI. Intel Research Council. 2007.
- Content-Based Similarity Search System for Non-Text, Feature-Rich Datasets, \$25,000. PI (Co-PI Charikar). Yahoo! Inc., 2007.
- U.S. Student Aid for Attending the 35th Annual International Symposium on Computer Architecture. PI (Co-PI L. Peh). NSF. \$30,000, 2007-08.
- Efficient Content-Based Similarity Search. Google, Inc. \$120,000. PI (Co-PI: Charikar). 2007.
- Content-Based Similarity Search System for Non-Text, Feature-Rich Datasets, \$100,000. PI (Co-PI Charikar). Yahoo! Inc., 2006.
- Media Mining Toolkit and Simulation Package for Many-Core Processors. \$54,300. PI. Intel Research Council. 2006.
- Efficient Content-Based Similarity Search. Google, Inc. \$110,000. PI (Co-PI: Charikar). 2005.
- Content-Based Similarity Search with MylifeBits. Microsoft Research Council. \$50,000. PI. 2005.

- Content-Searchable Storage for Feature-Rich Data. NSF. \$900,000. PI (Co-PI: Charikar, Cook, Troyanskaya). 2005-2007.
- A Flow-Based Computer System Architecture for Synergistic Hardware-Software Management of Embedded Systems. NSF. \$500,000. Co-PI (PI: Li-Shiuan Peh). 2005-2007.
- Integration and Visualization of Diverse Biological Data. NIH NIGMS RO1, \$1,125,000. Co-PI (PI:Troyanskaya). 2005-2009.
- Software Tools for New-Generation, Display-Centric Applications. NSF. \$500,000. PI (Co-PI: Funkhouser, Rusinkiewicz, and Troyanskaya). 2004-2007.
- ITR: Ubiquitous Mobile Storage, NSF, \$300,000. Co-PI (PI: Randy Wang). 2003-2006.
- Scalable Display Wall Technologies. DOE, Principal Investigator. \$169,899. PI. 2003-2005.
- Efficient System Programming for Programmable Devices, Intel Research Council. \$50,000. PI. 2002.
- A National Collaboratory to Advance the Science of High Temperature Plasma Physics for Magnetic Fusion. \$675,000, Co-Principal Investigator (PI: D. Schissel at General Atomics), DOE. 2001-2003.
- CISE Research Infrastructure: CISE Pervasive Computing: Applications and Systems, \$1,710,288, Co-Principal Investigator (PI: David Dobkin), NSF 2001-2005.
- Scalability Issues in Wide Area Distributed Storage Systems, \$100,000. Principal Investigator, Intel Research Council. 2001-2002.
- Scalable Display Wall. \$210,000, Principal Investigator, NCSA Alliances. 2001-2002.
- General Purpose Routers for the Next Generation Internet. \$1,136,721, Co-Principal Investigator (PI: Larry Peterson), NSF, 1999-2002.
- Adaptive, Performance-Portable Software for Next Generation and Immersive Applications. \$600,000, Principal Investigator. NSF. 1999-2002.
- Corridor One: An Integrated Distance Visualization Environment for SSI and ASCII Applications. \$1,500,000, Principal Investigator at Princeton (subcontract from ANL, PI: Rick Stevens). DOE. 1999-2002.
- An Inexpensive, Network-Attachable Display Wall System for High-Performance Immersive Visualization. \$1,176,000, Principal Investigator. DOE. 1999-2001.
- Parallel Computing, Internet and Multimedia Applications. \$2,700,000, Co-Principal Investigator (PI: J. Ostriker). Intel Technology Grant for Education 2000, Intel Corporation, 1997-2000.
- A Scalable, Inexpensive Display Wall for High-Performance Graphics and Visualization. \$211,000. Principal Investigator, Intel Corporation, 1997-98.
- Distributed Memory Management on the ASCII Red Machine. \$200,000, Principal Investigator, Sandia National Labs, 1997-98.
- Network of Symmetric Multiprocessors: An Infrastructure for Research in Scalable Systems and Applications. \$1,533,725, Principal Investigator. NSF. Grant CDA-9624099. 1996-2000.
- SHRIMP: Architectural and Systems Support for Inexpensive, High-Performance Multiprocessors. \$1,549,995, Pricipal Investigator. NSF MIP-9420653. 1995-1998.
- Systems Support for Scalable Parallel Architectures. \$1,059,461, Pricipal Investigator. DARPA. Grant N00014-95-1-1144. 1995-1997.
- Improving Memory Hierarchy: An Scalable I/O Effort. \$997,651, Principal Investigator. DARPA. Subcontract via Caltech. 1995-98.

Patents

1. Efficient Data Storage System (with Ming Benjamin Zhu and Hugo Patterson), U.S. Patent 8,275,955. 2012.
2. Partitioning a data stream using embedded anchors (with Umesh Maheshwari and Hugo Patterson). U.S. Patent 8,234,413. 2012.
3. Partitioning a data stream using embedded anchors (with Umesh Maheshwari and Hugo Patterson). U.S. Patent 7,979,584. July 2011.

4. Similarity search system with compact data structures (with Qin Lv and Moses Charikar). U.S. Patent 7,966,327. June 2011.
5. Cluster storage using delta compression (with Hugo Patterson, Ming Benjamin Zhu, Sazzala Venkata Reddy, Umesh Maheshwari, Edward K. Lee). U.S. Patent 7,962,520. June 2011.
6. Efficient computation of sketches, (with Ming Benjamin Zhu). U.S. Patent 7,844,652. 2010.
7. Efficient Data Storage System (with Ming Benjamin Zhu and Hugo Patterson). U.S. Patent 7,769,967. August 2010.
8. Network file system-based data storage system (with Hugo Patterson; Zhu; Ming Benjamin, Allan Bricker. Richard Johnsson, Sazzala Reddy, Jeffery Zabarsky). U.S. Patent 7,747,581. June 2010.
9. Network file system-based data storage system (with Hugo Patterson; Zhu; Ming Benjamin, Allan Bricker. Richard Johnsson, Sazzala Reddy, Jeffery Zabarsky). U.S. Patent 7,689,633. March 2010.
10. Efficient data storage using resemblance of data segments (with M. Zhu, U. Maheshwari, Z. Yang). U.S. Patent 7,562,186. 2009.
11. Efficient Data Storage System (with Ming Benjamin Zhu and Hugo Patterson). U.S. Patent 7,434,015. October 2008.
12. Efficient Data Storage System (with Ming Benjamin Zhu and Hugo Patterson). U.S. Patent 7,373,464. May 2008.
13. Efficient Data Storage System (with Ming Benjamin Zhu and Hugo Patterson). U.S. Patent 7,305,532. December 2007.
14. Efficient Data Storage System (with Ming Benjamin Zhu and Hugo Patterson). U.S. Patent 7,065,619. June 2006.
15. Archival Data Storage System and Method (with Howard Lee). U.S. Patent 7,007,141. 2006.
16. Efficient Data Storage System (with Ben Zhu and Hugo Patterson). U.S. Patent 6,928,526. August 2005.
17. Optical blending for multi-projector display wall systems (with Yuqun Chen and Timothy Housel). U.S. Patent 6,570,623. 2000.
18. Method for Improving Cache Locality of A Computer Program (with Jan Edler and James Philbin). U.S. Patent 5,724,586. 1996.
19. User-Level Direct Memory Access (with Matthias Blumrich, Cezary Dubnicki, and Edward Felten). U.S. Patent 5,659,798. 1996.
20. Real Time, Concurrent Garbage Collection System and Method (With Andrew Appel and John Ellis). U.S. Patent 5,088,036. 1989.

Publications

1. Zhen Jia, Aleksandar Zlateski, Frédo Durand and Kai Li. Optimizing N-Dimensional, Winograd-Based Convolution for Manycore CPUs. Proceedings of ACM Principles and Practice of Parallel Programming, to appear in 2018.
2. Qin Lv, William Josephson, Zhe Wang, Moses Charikar, Kai Li. Intelligent Probing for Locality Sensitive Hashing: Multi-Probe LSH and Beyond. Proceedings of the VLDB Endowment (10)12:2021-2024. 2017.
3. Jonathan D. Cohen, Nathaniel Daw. Barbara Engelhardt, Uri Hasson, Kai Li, Yael Niv, Kenneth A. Norman, Jonathan Pillow, Peter Ramadge, Nicholas B. Turk-Browne, & Theodore L. Willke. Computational Approaches to fMRI Analysis. *Nature Neuroscience* (20): 304–313, 2017. doi:10.1038/nn.4499
4. Linpeng Tang, Qi Huang, Amit Puntambekar, Ymir Vigfusson, Wyatt Lloyd, Kai Li. Popularity Prediction of Facebook Videos for Higher Quality Streaming. USENIX Annual Technology Conference. 2017.

5. Yida Wang, Bryn Keller, Mihai Capotă, Michael J. Anderson, Narayanan Sundaram, Jonathan D. Cohen‡, Kai Li, Nicholas B. Turk-Browne‡, Theodore L. Willke. Real-time Full Correlation Matrix Analysis of fMRI Data. In *Proceeding of 2016 IEEE International Conference on Big Data*. Washington D.C. 2016.
6. Yue Cheng, Fred Douglass, Philip Shilane, Michael Trachtman, Grant Wallace, Peter Desnoyers, Kai Li. Erasing Belady's Limitations: In Search of Flash Cache Offline Optimality. In *Proceedings of USENIX Annual Technical Conference*, 2016.
7. Qian Zhu, Aaron Wong, Arjun Krishnan, Miriam Aure, Alicja Tadych, Ran Zhang, David Corney, Casey Greene, Lars Bongo, Vessela Kristensen, Moses Charikar, Kai Li, Olga Troyanskaya. Targeted exploration and analysis of large cross-platform human transcriptomic compendia. *Nature Methods*. 12(3): 211-214, 2015.
8. Yida Wang, Michael J. Anderson, Jonathan D. Cohen, Alexander Heinecke, Kai Li, Nadathur Satish, Narayanan Sundaram, Nick B. Turk-Browne, and Theodore L. Willke, "Full Correlation Matrix Analysis of fMRI Data on Intel® Xeon Phi™ Coprocessors," in *SC'15 International Conference for High Performance Computing, Networking, Storage and Analysis*, 2015.
9. Yida Wang, Jonathan D. Cohen, Kai Li, Nick Turk-Browne. Full correlation matrix analysis (FCMA): An unbiased method for task-related functional connectivity. *Journal of Neuroscience Methods*. 251: 108-119, 2015.
10. Linpeng Tang, Qi Huang, Wyatt Lloyd, Sanjeev Kumar, and Kai Li. RIPQ: Advanced Photo Caching on Flash for Facebook. In *Proceedings of the 13th USENIX conference on File and Storage Technologies (FAST 15)*, February 2015.
11. Li-Fang Cheng, Michael Draugelis, Kai Li and Barbara Engelhardt. A Temporal Difference Approach with Unsupervised Data Imputation for Early Sepsis Prediction. 2nd Workshop on Machine Learning for Clinical Data Analysis, Healthcare and Genomics (NIPS 2014).
12. Wei Dong, Kai Li, Zhe Wang. High Confidence Near-Duplicate Image Detection. *ACM International Conference on Multimedia Retrieval (ICMR)*, 2012.
13. Gala Yadgar, Michael Factor, Kai Li and Assaf Schuster. *Management of Multilevel, Multiclient Cache Hierarchies with Application Hints*. *ACM Transactions on Computer Systems (TOCS)*. Volume 29 Issue 2, May 2011.
14. Wei Dong, Moses Charikar, Kai Li. Efficient K-Nearest Neighbor Graph Construction for Generic Similarity Measures. In *Proceedings of the 20th International World Wide Web Conference*. Hyderabad, India. March 2011.
15. Wei Dong, Fred Douglass, Kai Li, Hugo Patterson, Sazzala Reddy, Philip Shilane. Tradeoffs in Scalable Data Routing for Deduplication Clusters. In *Proceedings of the 9th USENIX Conference on File and Storage Technologies*, 2011.
16. Christian Bienia and Kai Li. Fidelity and Scaling of the PARSEC Benchmark Inputs. In *Proceedings of the 2010 IEEE International Symposium on Workload Characterization*, December 2010.
17. Jia Deng, Alex Berg, Kai Li and Li Fei-Fei. What does classifying more than 10,000 image categories tell us? *European Conference on Computer Vision*, September 2010.
18. Christian Bienia and Kai Li. Characteristics of Workloads Using the Pipeline Programming Model. In *Proceedings of the Third Workshop on Emerging Applications and Many-Core Architecture*. Held in conjunction with the 37th International Symposium on Computer Architecture, June 2010.
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