
Dr. Ben Yanbin Zhao

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EDUCATION

University of California at Berkeley Ph.D. in Computer Science: advisors John Kubiatawicz and Anthony Joseph. M.S. in Computer Science: advisor Anthony Joseph	Berkeley, CA August, 2004 December, 2000
Yale University B.S. in Computer Science Graduated Cum Laude and Distinction in the Major	New Haven, CT May, 1997

RESEARCH INTERESTS

- Social Networks
- Data-intensive Computing
- Distributed Systems
- Anonymity and Privacy
- Wireless Networks
- Vehicular Networks
- Peer-to-Peer Systems

APPOINTMENTS

University of California at Santa Barbara Assistant Professor of Computer Science	Santa Barbara, CA July 2004 – Present
PeerAnt Inc. Technical Advisory Board	Sunnyvale, CA March 2007 – December 2008
Microsoft Research, UK Visiting Researcher	Cambridge, UK July 2007 – August 2007
University of California at Berkeley Graduate Student Researcher Principal architect of the Tapestry structured peer-to-peer network and founding member of the OceanStore project on highly persistent global-scale storage.	Berkeley, CA August 1997 – June 2004
IBM Almaden Research Center Visiting Researcher, TSpaces Group	San Jose, CA June 1999 – June 2000

HONORS AND AWARDS

- **UCSB Regent Faculty Fellowship**, 2009
- **ComputerWorld Magazine Top IT Innovators under 40**, 2007
- **MIT Technology Review TR-35** (Top 35 Technological Innovators under Age 35), 2006
- **NSF CAREER Award**, *Gaia: A Self-organizing, Self-healing Network Infrastructure*, 2005
- **Best Student Paper Award**, *USENIX Conference on File and Storage Technologies (FAST)*, 2003
- **Best Paper Award**, *ACM International Workshop on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM)*, 2001
- **Best Paper Award**, *IEEE Computer Networks*, 2001
- **U. C. Regents Fellowship**, 1998
- **Cum Laude and Distinction in Major**, Yale University, 1997
- **Tau Beta Pi**, Yale University, 1996
- **Congressional Youth Scholar**, 1993

PROFESSIONAL AFFILIATIONS

Member, Association for Computing Machinery (ACM)
Member, ACM SIGOPS
Member, ACM SIGCOMM
Member, ACM SIGMOBILE
Member, Institute of Electrical and Electronics Engineers (IEEE)
Member of USENIX

PROFESSIONAL ACTIVITIES

Technical Program Committees

- **IEEE Conference on World of Wireless, Mobile and Multimedia Networks (WoWMoM)**, 2010
- **IEEE Annual Conference on Computer Communications (INFOCOM)**, 2008, 2009, 2010
- **IEEE International Conference on Distributed Computing Systems (ICDCS)**, 2005, 2006, 2007, 2009, 2010
- **IEEE Conference on Peer-to-Peer Computing (P2P)**, 2009, 2010
- **IEEE Symposium on Reliable Distributed Systems (SRDS)**, 2009
- **ICST Conference on Security and Privacy in Communication Networks (SecureComm)**, 2009
- **International Conference on Web Information Systems Engineering (WISE)**, 2009
- **International Workshop on Performance Modeling and Evaluation (PMECT)**, 2007, 2008, 2009
- **IEEE International Workshop on Performance Modeling and Analysis of Communication in Wired and Wireless Networks (PMAC-2WN)**, 2006, 2007, 2008
- **IEEE International Conference on Parallel and Distributed Systems (ICPADS)**, 2007, 2008
- **IEEE International Workshop on Mobile Vehicular Networks (MoVeNet)**, 2007
- **IEEE International Conference on Network Protocols (ICNP)**, 2006, 2007
- **IEEE International Workshop on Quality of Service (IWQoS)**, 2007
- **International Workshop on Dependable and Sustainable Peer-to-Peer Systems (DAS-P2P)**, 2007
- **ACM Workshop on Decentralized Resource Sharing in Mobile Computing and Networking (MobiShare)**, 2006
- **ACM Workshop on Scalable Trusted Computing (STC)**, 2006
- **International Workshop on Peer-to-Peer Systems (IPTPS)**, 2005, 2006
- **Advanced in Peer-to-Peer Multimedia Streaming (P2MS)**, 2005
- **ACM Workshop on Wireless Security (WiSe)**, 2005
- **International Workshop on Applications and Economics of P2P Systems (AEPP)**, 2005
- **IFIP Networking Conference**, 2005
- **International Workshop on Mobile Peer-to-Peer Computing (MP2P)**, 2004

Editorship

- **Guest Editor**, Journal of Advances in Multimedia, Special Issue: "Towards Next-Generation Peer-to-Peer Services," Hindawi, 2007.
- **Guest Editor**, Concurrency and Computation: Practice and Experience, Special Issue: "Recent Advances in Peer-to-Peer Systems and Security," Wiley, 2007.

Conference Leadership

- **Steering Committee**, International Workshop on Peer-To-Peer Systems (IPTPS)
- **Program Co-Chair**, IEEE Conference on Peer-to-Peer Computing (P2P), 2010
- **Global Chair**, European Conference on Parallel Processing (Euro-Par) Topic 7, 2009
- **Program Co-Chair**, International Workshop on Peer-To-Peer Systems (IPTPS), 2006
- **Web Chair**, IEEE International Conference on Network Protocols (ICNP), 2006
- **Steering Committee**, Applications and Economics of Peer-to-Peer Systems (AEPP)
- **Panel Chair**, Applications and Economics of Peer-to-Peer Systems (AEPP), 2005

Other Appointments

- National Science Foundation (NSF) Invited Proposal Funding Panelist
 - CNS Panel: Computer Systems Research (CSR), 2005, 2006, 2007, 2008
 - CNS Panel: CyberTrust/Trustworthy Computing, 2005, 2009
 - CNS Panel: CAREER, 2006, 2007
- Hong Kong Research Grants Council Panelist: 2007, 2009

PUBLICATIONS

Journal Publications

1. "The Design of a Reliable Reputation System." Gayatri Swamynathan, Kevin Almeroth and Ben Y. Zhao. To Appear: *Electronic Commerce Special Issue on Trust and Privacy Aspects of Electronic Commerce*. 2009
2. "Securing Structured Overlays Against Identity Attacks." Krishna P. N. Puttaswamy, Haitao Zheng and Ben Y. Zhao. To Appear: *IEEE Transactions on Parallel and Distributed Systems*. Spring 2009.
3. "QUORUM-Quality Of service RoUting in wireless Mesh networks." Vinod Kone, Sudipto Das, Ben Y. Zhao and Haitao Zheng. *ACM Mobile Networks and Applications (MONET)*. December 2007, Vol. 12, No. 5-6, Pgs. 358-369.
4. "Globally Decoupled Reputations for Large Distributed Networks." Gayatri Swamynathan, Ben Y. Zhao, Kevin C. Almeroth and Haitao Zheng. *Hindawi Advances in Multimedia, Special Issue on Towards Next-Generation Peer-to-Peer Services*. Vol. 2007, No. 1, 2007.
5. "Exploring the Feasibility of Proactive Reputations." Gayatri Swamynathan, Ben Y. Zhao and Kevin C. Almeroth. *Wiley Concurrency and Computation: Practice and Experience, Special Issue on Recent Advances in Peer-to-Peer Systems and Security*. May 2007, Vol. 20, No. 2, Pgs. 155-166.
6. "Determining Model Accuracy of Network Traces." Almudena Konrad, Ben Y. Zhao, and Anthony D. Joseph. *Elsevier Journal of Computer and System Sciences*. November 2006, Vol. 72, No. 7, Pgs. 1156-1171.
7. "Collaboration and Fairness in Opportunistic Spectrum Access." Chunyi Peng, Haitao Zheng, and Ben Y. Zhao. *ACM Mobile Networks and Applications (MONET)*. May 2006, Vol. 11, 555-576.
8. "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 (JSAC)*. January 2004, Vol. 22, No. 1, 41-53.

9. "Distributed Object Location in a Dynamic Network." Kirsten Hildrum, John D. Kubiawicz, Satish Rao and Ben Y. Zhao. *Springer-Verlag Theory of Computing Systems*, March 2004, No. 37, 405-440.
10. "A Markov-Based Channel Model Algorithm for Wireless Networks." Almudena Konrad, Ben Y. Zhao, Anthony D. Joseph and Reiner Ludwig. *ACM Baltzer Wireless Networks*, May 2003, Vol. 9, No. 3, 189-199.
11. "Maintenance-Free Global Storage in OceanStore." Sean Rhea, Chris Wells, Patrick Eaton, Dennis Geels, Ben Zhao, Hakim Weatherspoon, and John Kubiawicz. *IEEE Internet Computing*, Sept/Oct 2001, Vol. 5, No. 5, 40-49.
12. "An Architecture for Secure Wide-Area Service Discovery." Todd D. Hodes, Steven E. Czerwinski, Ben Y. Zhao, Anthony D. Joseph, Randy H. Katz. *ACM Baltzer Wireless Networks*, March 2002, Vol. 8, No. 2-3, 213-230.
13. "The Ninja Architecture for Robust Internet-Scale Systems and Services." Steven D. Gribble, Matt Welsh et. al. *IEEE Computer Networks Special Issue on Pervasive Computing*, March 2001, Vol. 35, No. 4. Best Paper Award.
14. "ICEBERG: An Internet-core Network Architecture for Integrated Communications." Helen J. Wang, Bhaskaran Raman, et. al. *IEEE Communications: Special Issue on IP-based Mobile Telecommunication Networks*, August 2000.

Books

15. *Future Directions in Distributed Computing*. Editors: Alex Shvartsman, Andre Schiper, Hakim Weatherspoon and Ben Y. Zhao. Springer-Verlag, LNCS 2584, 2003.

Conference and Workshop Publications

16. "StarClique: Guaranteeing User Privacy in Social Networks Against Intersection Attacks." Krishna P. N. Puttaswamy, Alessandra Sala, and Ben Y. Zhao. Proceedings of ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT), Rome, Italy, December, 2009.
17. "User Interactions in Social Networks and their Implications." Christo Wilson, Bryce Boe, Alessandra Sala, Krishna P. N. Puttaswamy and Ben Y. Zhao. Proceedings of *ACM EuroSys*, Nuremberg, Germany, April, 2009.
18. "Rome: Performance and Anonymity using Route Meshes." Krishna P. N. Puttaswamy, Alessandra Sala, Omer Egecioglu, and Ben Y. Zhao. Proceedings of *the 28th IEEE International Conference on Computer Communications (INFOCOM), Mini-symposium*, Rio de Janeiro, Brazil, April 2009.
19. "Improving Anonymity using Social Links." Krishna P. N. Puttaswamy, Alessandra Sala, and Ben Y. Zhao. Proceedings of *Fourth IEEE International Workshop on Secure Network Protocols (NPSec 2008)*, Orlando, FL, October 2008.
20. "Defending Anonymity against Predecessor Attacks in Bluemoon." Krishna P. N. Puttaswamy, Alessandra Sala, Christo Wilson, and Ben Y. Zhao. Proceedings of *IEEE International Conference on Network Protocols (ICNP 2008)*, Orlando, FL, October 2008.
21. "Towards Reliable Reputations for Dynamic Networked Systems." Gayatri Swamynathan, Ben Y. Zhao, Kevin C. Almeroth, and S. Rao Jammalamadaka. Proceedings of *IEEE Symposium on Reliable Distributed Systems (SRDS 2008)*, Naples, Italy, October 2008.
22. "Probabilistic Failure Detection for Efficient Distributed Storage Maintenance." Jing Tian, Zhi Yang, Wei Chen, Ben Y. Zhao and Yafei Dai. Proceedings of *IEEE Symposium on Reliable Distributed*

Systems (SRDS 2008), Naples, Italy, October 2008.

23. "Can Social Networks Improve e-Commerce: a Study on Social Marketplaces." Gayatri Swamynathan, Christo Wilson, Bryce Boe, Kevin C. Almeroth and Ben Y. Zhao. Proceedings of *First SIGCOMM Workshop on Online Social Networks (WOSN 2008)*, Seattle, WA, August 2008.
24. "High Throughput Spectrum-aware Routing for Cognitive Radio Based Ad-hoc Networks." Ashwin Sampath, Lei Yang, Lili Cao, Haitao Zheng, and Ben Y. Zhao. Proceedings of *the 3rd International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CROWNCOM 2008)*, Singapore, May 2008.
25. "Searching for Rare Objects using Index Replication." Krishna P. N. Puttaswamy, Alessandra Sala and Ben Y. Zhao. Proceedings of *the 27th IEEE International Conference on Computer Communications (INFOCOM)*, Phoenix, AZ, April 2008.
26. "Towards Location-aware Topology in both Unstructured and Structured P2P Systems." Tongqing Qiu, Edward Chan, Mao Ye, Guihai Chen and Ben Y. Zhao. Proceedings of *International Conference on Parallel Processing (ICPP)*, XiAn, China, September 2007.
27. "QUORUM - Quality Of service RoUting in wireless Mesh networks." Vinod Kone, Sudipto Das, Ben Y. Zhao and Haitao Zheng. Proceedings of *International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine)*, Vancouver, BC, Canada, August 2007.
28. "Multi-channel Jamming Attacks using Cognitive Radios." Ashwin Sampath, Hui Dai, Haitao Zheng and Ben Y. Zhao. Proceedings of *the 16th International Conference on Computer Communications and Networks (ICCCN)*, Honolulu, HI, August 2007.
29. "Fairness Attacks in the Explicit Control Protocol." Christo Wilson, Chris Coakley and Ben Y. Zhao. Proceedings of *Fifteenth IEEE International Workshop on Quality of Service (IWQoS)*, Chicago, IL, June 2007.
30. "A Case for Unstructured Distributed Hash Tables." Krishna P. N. Puttaswamy and Ben Y. Zhao. Proceedings of *IEEE Global Internet Symposium*, Anchorage, AK, May 2007.
31. "Deploying Video-on-Demand Services on Cable Networks." Matthew Allen, Ben Y. Zhao and Rich Wolski. Proceedings of *IEEE International Conference on Distributed Computing Systems (ICDCS)*, Toronto, Canada, June 2007.
32. "An Empirical Study of Collusion Behavior in the Maze P2P File-Sharing System." Qiao Lian, Zheng Zhang, Mao Yang, Ben Y. Zhao, Yafei Dai and Xiaoming Li. Proceedings of *IEEE International Conference on Distributed Computing Systems (ICDCS)*, Toronto, Canada, June 2007.
33. "HPTP: Relieving the Tension between ISPs and P2P." Guobin Shen, Ye Wang, Yongqiang Xiong, Ben Y. Zhao and Zhi-Li Zhang. Proceedings of *the 6th International Workshop on Peer-to-Peer Systems (IPTPS)*, Bellevue, WA, February 2007.
34. "Scalable Access Control for Web Services." Gayatri Swamynathan, Tyler Close, Sujata Banerjee, Rick McGeer, Ben Y. Zhao and Kevin C. Almeroth. Proceedings of *C5*, Kyoto, Japan, January 2007.
35. "Integrated Data Location in Multi-hop Wireless Networks." Irfan Sheriff, Prashanth Acharya, Ashwin Sampath, Ben Y. Zhao and Elizabeth Belding. Proceedings of *IEEE/Create-Net COMSWARE*, Bangalore, India, January 2007.
36. "Increasing TCP Throughput with an Enhanced Control Plane." A. Bavier et al. Proceedings of *MILCOM*, Washington, DC, October 2006.

37. "Energy Consumption and Conservation in Mobile Peer-to-Peer Systems." Selim Gurun, Priya Nagpurkar and Ben Y. Zhao. *Proceedings of ACM MobiShare*, Los Angeles, CA, September 2006.
38. "Location Independent Compact Routing for Wireless Networks." Robert Gilbert, Kerby Johnson, Shaomei Wu, Ben Y. Zhao and Haitao Zheng. *Proceedings of ACM MobiShare*, Los Angeles, CA, September 2006.
39. "Understanding User Behavior in Large Scale Video-on-Demand Systems." Hongliang Yu, Dongdong Zheng, Ben Y. Zhao and Weimin Zheng. *Proceedings of the 1st EuroSys*, Leuven, Belgium, April 2006.
40. "Parallelizing Skyline Queries for Scalable Distribution." Ping Wu, Caijie Zhang, Ying Feng, Ben Y. Zhao, Divyakant Agrawal and Amr El Abbadi. *Proceedings of the 10th International Conference on Extending Database Technology (EDBT)*, Munich, Germany, March 2006.
41. "Exploring the Feasibility of Proactive Reputations." Gayatri Swamynathan, Ben Y. Zhao and Kevin C. Almeroth. *Proceedings of the 5th International Workshop on Peer-to-Peer Systems (IPTPS)*, Santa Barbara, CA, February 2006.
42. "Identity Theft Protection in Structured Overlays." Lakshmi Ganesh and Ben Y. Zhao. *Proceedings of the 1st Workshop on Secure Network Protocols (NPSec)*, Boston, MA, November 2005.
43. "Decoupling Service and Feedback Trust in a Peer-to-Peer Reputation System." Gayatri Swamynathan, Ben Y. Zhao and Kevin Almeroth. *Proceedings of the 1st International Workshop on Applications and Economics of Peer-to-Peer Systems (AEPP)*, Nanjing, China, November 2005.
44. "Z-Ring: Fast Prefix Routing via a Low Maintenance Membership Protocol." Wei Chen, Qiao Lian, Zheng Zhang, Shaomei Wu, and Ben Y. Zhao. *Proceedings of the 13th IEEE International Conference on Network Protocols (ICNP)*, Boston, MA, November 2005.
45. "Choosing an Accurate Network Model using Domain Analysis." Almodena Konrad, Ben Y. Zhao and Anthony D. Joseph. *Proceedings of the 1st International Workshop on Performance Modeling in Wired, Wireless, Mobile Networking and Computing*, Fukuoka, Japan, July 2005.
46. "Cashmere: Resilient Anonymous Routing." Li Zhuang, Feng Zhou, Ben Y. Zhao and Antony Rowstron. *Proceedings of the 2nd Symposium on Networked Systems Design and Implementation (NSDI)*, Boston, MA, May 2005.
47. "Impact of Neighbor Selection on Performance and Resilience of Structured P2P Networks." Byung-Gon Chun, John Kubiawicz and Ben Y. Zhao. *Proceedings of the 4th International Workshop on Peer-To-Peer Systems (IPTPS)*, Ithaca, NY. February 2005.
48. "Hybrid Overlay Structure Based on Random Walk." Ruixiong Tian, Yongqiang Xiong, Qian Zhang, Bo Li, Ben Y. Zhao and Xing Li. *Proceedings of the 4th International Workshop on Peer-To-Peer Systems (IPTPS)*, Ithaca, NY. February 2005.
49. "Deployment of a large scale peer-to-peer social network." Mao Yang, Hua Chen, Ben Y. Zhao, Yafei Dai and Zheng Zhang. *Proceedings of the 1st Workshop on Real, Large Distributed Systems (WORLDS)*, San Francisco, CA. December 2004.
50. "Rapid Mobility via Type Indirection." Ben Y. Zhao, Ling Huang, Anthony D. Joseph and John D. Kubiawicz. *Proceedings of the 3rd International Workshop on Peer-to-Peer Systems (IPTPS)*, San Diego, CA. February 2004.
51. "Exploiting Routing Redundancy via Structured Peer-to-Peer Overlays." Ben Y. Zhao, Ling Huang, Jeremy Stribling, Anthony D. Joseph and John D. Kubiawicz. *Proceedings of the 11th IEEE International Conference on Network Protocols (ICNP)*. Atlanta, GA. November 2003.

52. "Approximate Object Location and Spam Filtering on Peer-to-Peer Systems." Feng Zhou, Li Zhuang, Ben Y. Zhao, Ling Huang, Anthony Joseph, and John Kubiatoiwicz. *Proceedings of ACM/IFIP International Conference on Middleware*, Rio de Janeiro, Brazil. June 2003.
53. "Towards a Common API for P2P Overlays." Frank Dabek, Ben Y. Zhao, Peter Druschel, Ion Stoica and John Kubiatoiwicz. *Proceedings of 2nd International Workshop on Peer-to-Peer Systems (IPTPS)*, Berkeley, CA. February, 2003.
54. "Pond: The First OceanStore Prototype," Sean Rhea, Patrick Eaton, Dennis Geels, Hakim Weatherspoon, Ben Zhao and John Kubiatoiwicz. *Proceedings of the 2nd USENIX Conference on File and Storage Technologies*, San Francisco, CA. April 2003. Best Student Paper Award.
55. "Distributed Object Location in a Dynamic Network." Kirsten Hildrum, John D. Kubiatoiwicz, Satish Rao and Ben Y. Zhao. *Proceedings of the Fourteenth ACM Symposium on Parallel Algorithms and Architectures (SPAA)*, Winnipeg, Canada. August 2002.
56. "Locality-aware Mechanisms for Large-scale Networks." Ben Y. Zhao, Anthony Joseph and John Kubiatoiwicz. *Proceedings of the First Workshop on Future Directions in Distributed Computing (FuDiCo)*, Bertinoro, Italy. June 2002.
57. "Brocade: Landmark Routing on Overlay Networks." Ben Y. Zhao, Yitao Duan, Ling Huang, Anthony D. Joseph, and John D. Kubiatoiwicz. *Proceedings of First International Workshop on Peer-to-Peer Systems (IPTPS)*, Cambridge, MA, March 2002.
58. "A Markov-based Channel Model Algorithm for Wireless Networks." Almudena Konrad, Ben Y. Zhao, Anthony D. Joseph, Reiner Ludwig. *Proceedings of the Fourth ACM International Workshop on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM)*, July, 2001. Best Paper Award.
59. "Bayeux: An Architecture for Scalable and Fault-tolerant Wide-Area Data Dissemination." Shelley Q. Zhuang, Ben Y. Zhao, Anthony D. Joseph, Randy H. Katz and John Kubiatoiwicz. *Proceedings of the Eleventh International Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV)*, June, 2001.
60. "OceanStore: An Architecture for Global-scale Persistent Storage." John Kubiatoiwicz et, al. *Proceedings of the Ninth International Conference on Architecture Support for Programming Languages and Operating Systems (ASPLOS)*, November, 2000.
61. "Flexible Internetworking of Devices and Controls." Michelle Munson, Todd Hodes, Thomas Fischer, Keung-Hae Lee, Toby Lehman, Ben Zhao. *Proceedings of IECON*, San Jose, CA, December 1999.
62. "An Architecture for a Secure Service Discovery Service." Steven Czerwinski, Ben Y. Zhao, Todd Hodes, Anthony Joseph, Randy Katz. *Proceedings of the Fifth ACM/IEEE International Conference on Mobile Computing and Networks (MobiCom)*, Seattle, WA, August 1999.