

# EREZ ZADOK, CURRICULUM VITAE

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## RESEARCH INTERESTS

Operating systems with a special focus on file systems, storage, clouds, hardware/architecture, encryption, security, benchmarking, performance analysis and optimization, energy efficiency, and system administration.

## EDUCATION

- May 2001 Ph.D., Computer Science, Columbia University, New York, NY,  
*FiST: A System for Stackable File-System Code Generation.*
- Sep 1997 M.Phil., Computer Science, Columbia University, New York, NY
- Oct 1994 M.S., Computer Science, Columbia University, New York, NY  
*Discovery and Hot Replacement of Replicated Read-Only File Systems, with Application to Mobile Computing*
- May 1991 B.S., Computer Science, Columbia University, New York, NY
- May 1982 Certified Technician, Electrical Engineering, Holtz College, Israel

## PROFESSIONAL EXPERIENCE

- Jan 2016–present Professor, Computer Science Department, Stony Brook University
- Jan 2007–2015 Associate Professor, Computer Science Department, Stony Brook University
- Jan 2001–Jan 2007 Assistant Professor, Computer Science Department, Stony Brook University
- 2013–present Director, Smart Energy Technologies (SET) Faculty Cluster, Stony Brook University
- 2016–present Technical Expert; Sterne, Kessler, Goldstein & Fox, P.L.L.C.
- 2015–present Technical Expert; Wilmer Cutler Pickering Hale and Dorr LLP. (WilmerHale)
- 2015–present Technical Expert; Ropes & Gray, LLP.
- 2014–2015 Technical Expert; Foley & Lardner, LLP.
- 2014–present Technical Expert; Latham & Watkins, LLP.
- 2014–present Technical Expert; Kecker & Van Nest, LLP.
- 2013–present Managing Member; Zadoks Consulting, LLP.
- 2013–2014 Technical Expert; Sterne, Kessler, Goldstein & Fox, P.L.L.C.
- 2013 Technical Expert; Akin, Gump, Strauss, Hauer & Feld, LLP.
- 2012–2015 Technical Expert; Susman Godfrey, LLP.
- 2012–2013 Technical Expert; Fish Richardson, LLP.

2010–2011	Technical Expert; Sughrue Mion, LLP.
2010	Technical Expert; One LLP.
2009–2010	Consultant; CTERA Networks, Inc.
2009–present	Consultant; Packet General Networks, Inc.
2006–2007	Technical Expert; Hennigan, Bennett, and Dorman, LLP.
1991–2000	Graduate Research Assistant, Computer Science Department, Columbia University
1999–2000	Director of Software Development, HydraWEB Technologies, Inc.
1994–1998	Project Leader, HydraWEB Technologies, Inc.
1990–1998	Consultant, SOS Corporation
1997	Manager of Computing Facilities, Computer Science Department, Columbia University
1991–1998	Technical Staff Member, Computer Science Department, Columbia University
1989–1991	Assistant Lab Manager, Academic Information Systems, Columbia University
1987–1989	Student Consultant, Academic Information Systems, Columbia University
1984–1986	National Army Service, Israeli Air Force, Israel
1982–1984	Programmer, Commodore Israel, Tel-Aviv, Israel
1981–1984	Computer Lab Manager, Holtz College, Tel-Aviv, Israel

## PERSONAL

Born December 4, 1964, Tel-Aviv, Israel.

Married, one child.

Citizenships: U.S.A and Israel

Fluent in English and Hebrew

Member: ACM, IEEE, IEEE Computer Society, USENIX

Affiliate: Storage Systems Research Center (SSRC), Jack Baskin School of Engineering, University of California, Santa Cruz, California.

Member: The I/O Traces, Tools and Analysis (IOTTA) Technical Work Group (TWG), part of the the Storage Networking Industry Association (SNIA).

## FUNDING

Mar 2016 – ...	<i>Early Detection of User-impersonating Attackers using Multilayer Tripwires</i> , U.S. Office of Naval Research (ONR). \$586,215, 3 years2. Co-PI with Nick Niki-forakis.
Jun 2016 - ...	<i>EAGER: Elastic Multi-layer Memcached Tiers</i> NSF. \$257,165, 2 years. Co-PI with Anshul Gandhi.
2016	EMC Corporation. <i>Deduplication research</i> , \$25,000, Single PI.

2015 EMC Corporation. *Deduplication research*, \$25,000, Single PI.

Feb 2015 *Student Travel Support for the 13<sup>th</sup> USENIX Conference on File and Storage Technologies (FAST 2015)*. NSF. \$20,000, 1 year. Sole PI.

Sep 2014 – ... *Adaptive Runtime Verification and Recovery for Mission-Critical Software*. U.S. Air Force Office of Scientific Research (AFOSR). \$620,861, 3 years. Co-PI with Scott A. Smolka and Scott D. Stoller. (Collaboration with NASA JPL.)

Jan 2014 – ... *Smarter Electric Grid Research, Innovation, Development, Demonstration, Deployment Center (SGRID3)*. Brookhaven Science Associates LLC (BNL), \$236,397, 1 year. Lead-PI with one other Stony Brook Co-PI.

2014 EMC Corporation. *Deduplication research*, \$25,000, Single PI.

Jun 2013 – ... *CSR: Medium: Collaborative Research: Workload-Aware Storage Architectures for Optimal Performance and Energy Efficiency*. NSF. \$513,900 (SBU share, total budget \$1,000,000), 3 years. Lead-PI with one other Stony Brook Co-PI, and two more institutions (Harvard U. and Harvey Mudd College).

Jan 2013 – ... *BIGDATA: Small: DCM: Collaborative Research: An efficient, versatile, scalable, and portable storage system for scientific data containers*. NSF. \$444,267 (SBU share, total budget \$746,290), 3 years. Lead-PI with two other Stony Brook Co-PIs, and two more institutions (Brandeis U. and Louisiana State U.).

Sep 2013 – ... *CRI-CI-ADDO-EN: National File System Trace Repository*. NSF. \$37,018 (SBU share, total budget \$167,817), 3 years. Co-PI with lead institution Harvey Mudd College.

2013 Western Digital Research award. *Shingled Magnetic Recording Disks Benchmarking*, \$50,000, Single PI.

Sep 2012 – ... *NFS4Sec: An Extensible Security Layer for Network Storage*. NSF. \$486,783, 3 years. Lead-PI with one other Co-PI.

2012-2013 *Server-Class Performance vs. Energy Optimizations*. Government of Israel (GoI), Mission to the USA. \$47,152, 1 year. Lead PI with one other Co-PI.

2011 NetApp Research award. *Dedup Workload Modeling, Synthetic Datasets, and Scalable Benchmarking*, \$40,000, Single PI.

2010 NetApp Research award. *A Study of Network Storage Benefits using FLASH Hardware with Indexing Workloads*, \$40,000, Single PI.

Nov 2010 – ... *Long Island Smart Energy Corridor*. Department of Energy (DOE), LIPA, and New York State. Collaboration between Stony Brook University, SUNY Farmingdale, and LIPA. \$2,822,638, Co-PI.

Sep 2009 – Aug 2013 *Collaborative Proposal: Performance- and Energy-Aware HEC Storage Stacks*. NSF. \$652,000, 3 years. Co-PI with Geoff Kuenning (Harvey Mudd College)

Sep 2009 – Aug 2013 *Collaborative Proposal: Secure Provenance in High End Computing Systems*. NSF. \$564,972, 3 years. Co-PI with Radu Sion. Collaborative project with Patrick McDaniel (Penn State U.) and Marianne Winslett (UIUC).

Apr 2009 – Nov 2012 *Survivable Software*. U.S. Air Force Office of Scientific Research (AFOSR).

- \$881,691, 39 months. Co-PI with Scott A. Smolka, Radu Grosu, Scott D. Stoller, and Klaus Havelund (NASA JPL).
- Feb 2010 *Student Travel Support for the First USENIX Workshop on Sustainable Information Technology (SustainIT 2010)*. NSF. \$10,000, 1 year. Lead PI.
- Aug 2006 – August 2010 *File System Tracing, Replaying, Profiling, and Analysis on HEC Systems*. NSF. \$760,252, 3 years. Lead PI with Klaus Mueller (Stony Brook) and Ethan Miller (UC Santa Cruz).
- 2009 Network Appliance Research award. *Power use in Storage Servers*. \$30,000 Single PI.
- 2008 *The Impact of Storage Software and Aging on Power Consumption*, **IBM Faculty award** (IBM T.J. Watson Labs). \$20,000, one year. Single PI.
- 2008 Network Appliance Equipment gift. *A Study of User File Access Patterns*. \$91,083 Single PI.
- Sep 2007 – ... *Center for Information Protection: A Multi-University Industry/University Collaborative Research Center*. NSF. \$250,147, 5 years. Co-PI with R. Sekar (PI), Tzi-Cker Chiueh, Scott Stoller, and Radu Sion.
- Sep 2006 – Aug 2009 *CT-ISG: N3S: Networked Secure Searchable Storage with Privacy and Correctness Assurances*. NSF. \$300,000, 3 years. Co-PI with Radu Sion.
- Aug 2006 – Aug 2010 *File System Tracing, Replaying, Profiling, and Analysis on HEC Systems*. NSF. \$760,252, 3 years. Lead PI with Klaus Mueller (Stony Brook) and Ethan Miller (UC Santa Cruz).
- Jul 2006 *End-to-End File Server Security*, **IBM Faculty award** (IBM Haifa Research Labs). \$20,000, one year. Single PI.
- Jun 2006 – Aug 2010 *CSR—PDOS: Support for Atomic Sequences of File System Operations*. NSF. \$561,727, 3 years. Lead PI with Margo Seltzer (Harvard University).
- Jan 2006 – Dec 2006 *Secure File Systems*, NY State “Millennium” award, \$204,528, one year. Co-PI with R. Sekar (PI), Tzi-Cker Chiueh, CR Ramakrishnan, Radu Sion, and Scott D. Stoller.
- Jul 2005 – Aug 2010 *CSR—AES: Runtime-Monitoring and Model Checking for High-Confidence Systems Software*. NSF. \$830,000, 4 years. Lead PI with Radu Grosu, Y. Annie Liu, Scott Smolka, and Scott D. Stoller.
- Sep 2005 – Aug 2004 *I/UCRC: A Plan for Developing a Multi-University Industry/University Collaborative Research Center on Cyber Security*. NSF. \$9,987, one year. Co-PI with R. Sekar, Radu Sion Scott D. Stoller, and Tzi-Cker Chiueh.
- Sep 2004 – Aug 2009 *Federal Cyber Service: Scholarship for Service (SFS)*. NSF. \$2,459,061, 4 years. Co-PI with R. Sekar, Scott D. Stoller, I. V. Ramakrishnan, and Tzi-Cker Chiueh.
- Sep 2003 – Aug 2008 *A Layered Approach to Securing Network File Systems*. NSF Trusted Computing Program (TC). \$400,000, 3 years. Single PI.
- Sep 2003 – Aug 2005 *Collaborative Research: Capacity Expansion in Information Assurance*. NSF Collaborative Research Proposal (CAP). \$199,883, 2 years. Co-PI with R. Sekar, Scott D. Stoller, and I. V. Ramakrishnan.

- Sep 2002 – Aug 2007 **CAREER:** *An In-Kernel Runtime Execution Environment for User-Level Programs*. NSF Next Generation Software Program (NGS). \$400,000, 5 years. Single PI.
- Jan 2003 – Dec 2003 *Assessing the Technological Basis for Enterprise Protection*, NIJ (CyberScience Lab) CSL. \$90,563, one year. Co-PI with R. Sekar, Tzi-cker Chiueh, and Scott D. Stoller.
- Sep 2002 – May 2003 New York State Strategic Partnership for Industrial Resurgence (SPIR), with Packet General Networks. *S3: Secure Shared Storage*. \$94,581. Single PI.
- May 2002 – Aug 2002 New York State Strategic Partnership for Industrial Resurgence (SPIR), with Packet General Networks. *A Secure and Scalable Network Appliance*. \$55,676. Single PI.
- Apr 2003 Microsoft Tablet PC Seed Award. \$4,169. Single PI.
- 2002 HP/Intel IA-64/IPF Second Generation Equipment gift. *Linux Application Performance and File System Security*. \$131,529. Single PI.
- 2001 HP/Intel IA-64/IPF Equipment gift. *Linux Network Scalability and File System Reliability*. \$22,490. Single PI.
- 2001 Red Hat University software award.

## AWARDS

- Sep 2011 Best Paper Award. S. D. Stoller and E. Bartocci and J. Seyster and R. Grosu and K. Havelund and S. A. Smolka and E. Zadok. Runtime verification with state estimation. In proceedings of the 2nd International Conference on Runtime Verification (RV'11).
- Dec 2009 LISTnet's "Top 20 techies of Long Island" award.
- Aug 2008 Service Award (for 2006–2008), Stony Brook University, Computer Science Department
- 2008 IBM Faculty award (IBM T.J. Watson Labs)
- 2007–2008 Chancellor's Award for Excellence in Teaching, State University of New York (SUNY).
- 2007–2008 President's Award for Excellence in Teaching, Stony Brook University.
- Aug 2006 Research Excellence Award (for 2005–2006), Stony Brook University, Computer Science Department
- Jul 2006 IBM Faculty award (IBM Haifa Research Labs)
- Nov 2005 Best Short Paper Award. N. Joukov, A. Kashyap, G. Sivathanu, E. Zadok. Kefence: An Electric Fence for Kernel Buffers. In proceedings of the first ACM International Workshop on Storage Security and Survivability (StorageSS 2005), "The Paradigm Shift to Info-Centric Protection," held in conjunction with the 12th ACM Conference on Computer and Communications Security (CCS 2005).
- May 2005 Best Paper Award. N. Joukov, A. Rai, and E. Zadok. Increasing Distributed Storage Survivability with a Stackable RAID-like File System. In proceedings of the 2005 IEEE/ACM Workshop on Cluster Security, in conjunction with the Fifth IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGrid).

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