

CURRICULUM VITAE

Rafail Ostrovsky

DISTINGUISHED PROFESSOR OF COMPUTER SCIENCE AND MATHEMATICS, UCLA

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**Research
Interests**

- Cryptography and Computer Security;
- Streaming Algorithms; Routing and Network Algorithms;
- Search and Classification Problems on High-Dimensional Data.

Education

NSF Mathematical Sciences Postdoctoral Research Fellow

Conducted at U.C. Berkeley 1992-95. Host: Prof. Manuel Blum.

Ph.D. in Computer Science, Massachusetts Institute of Technology, 1989-92.

- Thesis titled: “Software Protection and Simulation on Oblivious RAMs”, Ph.D. advisor: Prof. Silvio Micali. Final version appeared in Journal of ACM, 1996. Practical applications of thesis work appeared in U.S. Patent No.5,123,045.
- Minor: “Management and Technology”, M.I.T. Sloan School of Management.

M.S. in Computer Science, Boston University, 1985-87.

B.A. *Magna Cum Laude* in Mathematics, State University of New York at Buffalo, 1980-84. Department of Mathematics Graduation Honors: *With highest distinction*.

**Personal
Data**

- U.S. citizen, naturalized in Boston, MA, 1986.

Appointments UCLA Computer Science Department

(2003 – present): Distinguished Professor of Computer Science.
Recruited in 2003 as a Full Professor with Tenure.

UCLA School of Engineering

(2003 – present): Director, Center for Information and Computation Security. (See <http://www.cs.ucla.edu/security/>.)

UCLA Department of Mathematics

(2006 – present): Distinguished Professor of Mathematics (by courtesy).

Appointments Bell Communications Research (Bellcore)

(cont.)

(1999 – 2003): Senior Research Scientist;

(1995 – 1999): Research Scientist,

Mathematics and Cryptography Research Group, Applied Research.

Berkeley

(Fall 1992 – August 1995): NSF Mathematical Sciences Postdoctoral Research Fellow. Host: Prof. Manuel Blum.

IBM T.J. Watson Research Center, Hawthorne, New York.

(July – August 1992); (June – September 1991); (July – September 1990): Summer Internship research positions: distributed algorithms, cryptography.

AT&T Bell Laboratories, Murray Hill, New Jersey.

(May – July 1990). Math Research Center. Summer Internship research position: cryptography, distributed and parallel algorithms.

Index Technology Corporation, Cambridge, Massachusetts.

(1987 – 1989). Research Engineer, Product Planning, Architecture and Research Group: algorithm design.

**Selected
Honors**

- JP Morgan Faculty Award, 2020
- Google Faculty Award, 2020
- Foreign Member of Academia Europaea, inducted in 2019.
- JP Morgan Faculty Award, 2019
- 2018 RSA Conference *Excellence in the Field of Mathematics* Award.
- IEEE Computer Society 2017 Technical Achievement Award.
- Fellow of IEEE, inducted in 2017.
- Distinguished Lecturer of the Year, Georgia Tech University, Computer Science Department, 2015.
- Distinguished Lecturer of the Year, Johns Hopkins University Computer Science Department, 2014.
- “Big Thinker Lecture Series, 2014” Yahoo Labs, Sunnyvale, California, 2014.”
- Rosalinde and Arthur Gilbert Foundation Research Award, 2014.
- Fellow of the IACR (International Association of Cryptologic Research), inducted in 2013.
- Pazy Memorial Research Award, 2012.

**Selected
Honors
(cont.)**

- B. John Garrick Foundation Award, 2011.
- Invitee to the Third Annual National Security Scholars Conference, 2011 - personal invitation by the Honorable Michael B. Donley, Secretary of the Air Force.
- Quantum Information Processing (QIP) 2011: paper nominated for QIP 2011 plenary talk.
- Plenary Invited Speaker - FBI 2009 conference on cyber security and Law Enforcement.
- Best Paper Award of the 2008 International Conference on Computing and Combinatorics (COCOON-2008);
- Plenary Invited Speaker – Public Key Cryptography international conference, 2007.
- IBM Faculty Award, 2006.
- 2006 Xerox Corporate Innovation Faculty Award.
- 2006 Xerox Corporation Distinguished Lecture Series invited speaker.
- Distinguished Cryptographer of the Year Lecture Series NTT Labs, Kanagawa, Japan, 2005
- B. John Garrick Foundation Research Award, 2005
- 2005 Xerox Corporate Innovation Faculty Award.
- OKAWA Foundation 2004 Research Award.
- SAIC 2002 Publication Prize for Best SAIC-employee Publication in Mathematics and Computer Science (SAIC bought Bellcore in 1997. SAIC was Bellcore Parent company with over 40,000 engineers and scientists at the time of the award).
- SAIC 2001 Publication Prize for Best SAIC-employee Publication in Mathematics and Computer Science.
- SAIC 1999 Publication Prize for Best SAIC-employee Publication in Information and Communications Technology.
- Bellcore prize for excellence in research, 1996.
- Henry H. Taub Prize for the paper “One-Way Functions are Essential for Non-Trivial Zero-Knowledge” 1993.
- NSF Mathematical Sciences Postdoctoral Research Fellowship, 1992-1995.
- IBM Graduate Fellowship, 1990-92.
- SUNY at Buffalo Department of Mathematics Undergraduate Graduation Honors: *With Highest Distinction*, 1984.

**Doctoral
Students
Advised**

(Listed by Ph.D. Graduation year with current affiliation)

- Saikrishna Badrinarayanan (CS Ph.D. 2020, researcher at Visa Research.)
- Arman Yousefi (CS Ph.D. 2018, researcher at Google)
- Dakshita Khurana (CS Ph.D. 2018, tenure track faculty at UIUC)
- Prabhanjan Ananth (CS Ph.D. 2017, tenure-track at U.C. Santa-Barbara))
- Will Rosenbaum (MATH Ph.D. 2016, tenure-track at Amherst Colledge)
- Wutichai Chongchitmate (MATH Ph.D. 2016, tenure-track faculty at Chulalongkorn University, Thailand.
- David Felber (CS Ph.D. 2015, researcher at Google.)
- Alan Roytman (CS Ph.D. 2014, postdoctoral researcher at Tel-Aviv University Computer Science)
- Ran Gelles (CS Ph.D. 2014, tenure-track faculty at Bar-Ilan University)
- Silas Richelson (MATH Ph.D. 2014, tenure-track faculty at UC Reiverside)
- Akshay Wadia (CS Ph.D. 2014, researcher at Silicon-Valley Startup)
- Chongwon Cho (CS Ph.D. 2013, researcher at Stealth Software Technologies, Inc)
- Sanjam Garg (CS Ph.D. 2012), tenure-track faculty of CS at U.C. Berkely.) (As my student, Sanjam won 2013 ACM Doctoral Dissertation Award)
- Cheng-Keui Lee (CS Ph.D. 2012, Security Researcher, LinkedIn)
- Abhishek Jain (CS Ph.D., 2012, tenure-track faculty at Johns Hopkins University.)
- Hakan Seyalioglu (Math Ph.D., 2012, researcher at Google.)
- Joshua Baron (Math Ph.D., 2012, Program Manager at DAPRA.)
- Clint Givens (Math Ph.D., 2012, tenure track Math faculty at University of Science and Arts of Oklahoma)
- Vladimir Braverman (C.S. Ph.D. 2011, C.S. associate professor with tenure at Johns Hopkins University.)
- Nishanth Chandran (C.S. Ph.D. 2011, now a researcher at MSR India)
- Omkant Pandey (CS Ph.D., 2010, nowa tenure track faculty at Stony Brook Computer Science Department.)
- Brett Hemenway Falk (Math Ph.D., 2010, assistant research professor at U. Penn.)
- Paul Bunn (Math Ph.D., 2010, senior researcher at Stealth Software Technologies, Inc.)
- Ryan Moriarty (CS Ph.D., 2010, entrepreneur in Silicon Valley. Startups: lol, apprats, flotate.)

**Doctoral
Students
(cont.)**

- Vipul Goyal (CS Ph.D., 2009, tenure-track associate professor at CMU.)
- Steve Lu (Math Ph.D., 2009, CEO at Stealth Software Technologies, Inc.)
- William Skeith (Math Ph.D., 2007; CS tenured associated professor at City College of NY).
- Jonathan Katz (CS Ph.D. 2002, Full Professor of CS at U. of Maryland, head of their cyber-security center.)

**Post-
Doctoral
Fellows**

- Dr. Silas Richelson (postdoc 2014 – 2015, now tenure-track faculty at U.C. Riverside)
- Dr. Anat Paskin (postdoc 2012 – 2014) Now tenure-track faculty at Ariel University, Israel.
- Dr. Alessandra Scafuro (postdoc 2012 – 2014) Now tenure-track Assistant Professor at NC State University
- Dr. Vassilis Zikas (postdoc 2012 – 2014) Now associate professor at Purdue.
- Dr. Bhavana Kanukurthi (postdoc 2011 –2014) Now associate professor with tenure at IISc, India.
- Dr. Jens Groth (postdoc 2005-2007) now professor at UCL, London.)

**Visiting
Researchers**

- Dr. Juan Garay (short term visits in 2010 – present)
- Prof. Yuval Ishai (short term visits in 2012 – present)
- Prof. Gopinno Persiano (short term visit in 2012, 2014)
- Prof. Yuval Rabani (short term visits in 2009 – present)
- Prof. Eyal Kushilevitz (short term visits in 2008 – present)
- Prof. Ivan Vinsconti (Sabbatical from U. Salerno, 2009-2010 and 2011-2013)
- Dr. Serge Fehr (short term visit in 2011)
- Prof. Yuval Ishai (3-year Sabbatical from Technion 2009-2011)
- Claudio Orlandi (6-month visit from Aarhus U. in 2010)
- Prof. Eyal Kushilevitz (6-month sabbatical from Technion, 2010)

**Current
Professional
Activities**

- (2020 – present): The National Academies of Sciences, Engineering, and Medicine, ad-hoc Committee on Future of Encryption August
- (2018–present): Steering Committee member IEEE FOCS Conference
- (2017–present): Johns Hopkins University Computer Science Department External Advisory Board
- (2014–present): Editorial Board member Journal of ACM
- (2006–present): Editorial Board member Journal of Cryptology
- (2005–present): Editorial Board member Algorithmica
- (2004–present): Editorial Board member International Journal of Information and Computer Security.
- (2004–present): Steering Committee member Conference on Security and Cryptography for Networks
- (2010–present): Advisory Board Member UCLA Advisory Board On Privacy and Data Protection.
- (2008–present): Board Member: Stealth Software Technologies, Inc.

**Past
Professional
Activities**

- Member of the Theory of Computing Committee: Ad hoc committee to combat harassment and discrimination in the Theory of Computing community 2018–2019.
- General Chair FOCS 2017
- Chair of the IEEE Technical Committee on Mathematical Foundations of Computing 2015-2018.
- General Chair FOCS 2016
- General Chair FOCS 2015
- Program Committee Chair FOCS 2011 (October 22-25, 2011 in Palm Springs, CA.)
- Steering Committee member UC Privacy and Information Security Steering Committee, (Appointed by University of California President, Mark G. Yudof) 2010–2014.
- Program Committee Chair, Sixth Conference on Security and Cryptography for Networks Amalfi, September 10-12, 2008.
- Program Chair, Institute of Pure and Applied Mathematics semester-long NSF-FUNDED program dedicated to Cybersecurity. September - December, 2006. Over 200 participants.

**Past
Professional
Activities
(cont.)**

- Co-organizer, IPAM Workshop Locally decodable codes, PIR, privacy-preserving data-mining, and encryption with special properties. October 25 - 28, 2006, IPAM.
- Co-organizer, IPAM Workshop Foundations of secure multi-party computation and zero-knowledge and its applications. November 13 - 17, 2006, IPAM.
- Co-chair, Dagshtul Workshop Anonymous Communication and its Applications October 9-14, 2005.
- Co-organizer, IPAM Workshop Multiscale Geometry and Analysis in High Dimensions October 19-23, 2004.
- Co-organizer, DIMACS Workshop Cryptographic Protocols in Complex Environments May 15-17, 2002.
- Program committee member Eurocrypt 2019, Darmstadt, Germany.
- Program committee member Eurocrypt 2017 30 April to 4 of May, 2017, Paris,.
- Program committee member PKC 2016 March 2016.
- Guest Editor SICOMP Special Issue dedicated to FOCS-2011 best invited papers.
- Program committee member Fifteenth IMA International Conference on Cryptography and Coding, December 2015.
- Program committee member ITCS-2012 Boston, January 8-10, 2012.
- Program committee member PODS-2011.
- Program committee member ICALP-2011.
- Program committee member EUROCRYPT-2011.
- Program committee member CT-RSA 2011.
- Program committee member TCC-2010: Seventh Theory of Cryptography Conference, 2010.
- Program committee member EUROCRYPT-2009 Cologne, April 26-30, 2009.
- Program committee member Algosensors-2009 5th International Workshop on Algorithmic Aspects of Wireless Sensor Networks 2009.
- Program committee member FOCS-2008 49th Annual IEEE Symposium on Foundations of Computer Science.
- Program committee member PKC-2007: International Workshop on Practice and Theory in Public Key Cryptography, (Apr 17-19 2007, Beijing). China 2007
- Program committee member ACISP-2007 12th Australian Conference on Information Security and Privacy July 2-6, 2007, Townsville, Queensland, Australia.

**Past
Professional
Activities
(cont.)**

- Program committee member ICALP-2006: 33rd International Colloquium on Automata, Languages and Programming, July 9-16, 2006, Venice, Italy
- Program committee member STOC-2006: Annual ACM Symposium on Theory of Computing, May 2006.
- Program committee member PKC 2006: International Workshop on Practice and Theory in Public Key Cryptography, April 24-26, New York City, USA.
- Program committee member INDOCRYPT-2005 December 10-12, 2005 Indian Institute of Science Bangalore, India, 2005.
- Program committee member EUROCRYPT-2005 Aarhus, May 22-26, 2005.
- Program committee member TCC-2005: Second Theory of Cryptography Conference, Feb 2005.
- Program committee member SCN-2004 Security in Communication Networks 2004 to be held on September 8-10 in Amalfi, Italy.
- Program committee member PODC-2004: 23rd Annual ACM Symposium on Principles of Distributed Computing, July 2004.
- Program committee member CRYPTO-2004: 24th Annual IACR/IEEE Conference on Cryptologic Research, August 2004.
- Program committee member CRYPTO-2003: 23rd Annual IACR/IEEE Conference on Cryptologic Research, August 2003.
- Program committee member STOC-2003: Annual ACM Symposium on Theory of Computing, May 2003.
- Program committee member CRYPTO-2002: 22nd Annual IACR/IEEE Conference on Cryptologic Research, 2002.
- Program committee member RANDOM-2002: The 6th International Workshop on Randomization and Approximation Techniques in Computer Science, 2002.
- Program committee member SCN-2002: Third Workshop on Security in Communication Networks, September 2002, Amalfi, Italy.
- Program committee member STOC-2000: Annual ACM Symposium on Theory of Computing, 2000.
- Program committee member SODA-2000: Eleventh Annual ACM-SIAM Symposium on Discrete Algorithms, , January 1-9, 2000, San Francisco.
- Program committee member SCN-99: Second Workshop on Security in Communication Networks, September 1999, Italy.
- Program committee member CRYPTO-98: 18th Annual IACR/IEEE Conference on Cryptologic Research 1998.
- Program committee member ISTCS-97: 5th ISRAEL Symposium on Theory of Computing and Systems, 1997.

Patents

1. Oded GOLDREICH and Rafail OSTROVSKY “COMPREHENSIVE SOFTWARE PROTECTION SYSTEM” U.S. Patent No.5,123,045.
2. Rafail OSTROVSKY and Eyal KUSHILEVITZ, “METHOD AND APPARATUS FOR PRIVATE INFORMATION RETRIEVAL FROM A SINGLE ELECTRONIC STORAGE DEVICE” U.S. Patent 6,167,392.
3. Rafail OSTROVSKY, Giovanni DI CRESCENZO, And Yuval ISHAI, “METHOD AND SYSTEM FOR NON-MALLEABLE AND NON-INTERACTIVE CRYPTOGRAPHIC COMMITMENT IN A NETWORK” U.S. Patent 6,301,664.
4. Rafail OSTROVSKY And Yuval RABANI, ”METHOD AND SYSTEM FOR DETERMINING APPROXIMATE HAMMING DISTANCE AND APPROXIMATE NEAREST NEIGHBORS IN AN ELECTRONIC STORAGE DEVICE” U.S. Patent 6,226,640.
5. William AIELLO, Rafail OSTROVSKY, And Sachin LODHA “A METHOD FOR EFFICIENTLY REVOKING DIGITAL IDENTITIES” U.S. Patent 6,397,329.
6. Rafail OSTROVSKY, Yuval ISHAI, AND Giovanni DI-CRESCENZO, “METHOD AND SYSTEM FOR PRIVATE INFORMATION RETRIEVAL USING COMMODITIES” U.S. Patent 6,216,128.
7. Rafail OSTROVSKY, Yuval ISHAI, AND Giovanni DI-CRESCENZO, “SYSTEM AND METHOD FOR PRIVATE INFORMATION RETRIEVAL USING VERIFIABLE COMMODITIES” U.S. Patent 6,438,554.
8. Giovanni DI-CRESCENZO, AND Rafail OSTROVSKY AND S. RAJAGOPALAN “METHOD AND SYSTEM FOR TIMED-RELEASE PUBLIC-KEY ENCRYPTION” U.S. Patent 6,813,358.
9. Rafail OSTROVSKY AND Yuval RABANI METHOD FOR LOW DISTORTION EMBEDDING OF EDIT DISTANCE TO HAMMING DISTANCE. US Patent 8,060,808.
10. Rafail OSTROVSKY AND William E. SKEITH III METHOD FOR PRIVATE KEYWORD SEARCH ON STREAMING DATA US Patent 8,291,237.
11. Rafail OSTROVSKY APPARATUS, SYSTEM, AND METHOD TO EFFICIENTLY SEARCH AND MODIFY INFORMATION STORED ON REMOTE SERVERS, WHILE HIDING ACCESS PATTERNS US Patent 8,364,979.
12. Yair AMIR AND Paul BUNN and Rafail OSTROVSKY AUTHENTICATED ADVERSARIAL ROUTING (application) US Pat. 12,922,141 - Filed Mar 13, 2009.
13. Steve LU and Rafail Ostrovsky APPARATUS, SYSTEM AND METHOD TO GARBLE PROGRAMS U.S. Pat. US 9,055,038

**Recent
Invited
Talks (*)**

- Invited talk: "Stewardship of Private Data with Cryptography" Technological Advisory Council of the Federal Trade Commission (FTC), August 12, 2020.
- Invited talk: "Keeping the Internet Safe" Board on Mathematical Sciences and Analytics (BMSA) within the National Academies of Sciences, Engineering and Medicine, March 17, 2020
- Invited talk: Distinguished Lecture Series, Cloud Security, Texas A&M University, Computer Science Department, October, 2018.
- Invited Keynote Lecture: workshop on "Mathematics of Information-Theoretic Cryptography" Institute of Mathematical Sciences (IMS) of National University of Singapore and Nanyang Technological University, Singapore, September 19-30, 2016.
- Invited Keynote Speaker Bay Area Crypto Day, "Adaptively secure garbled circuits from AES" Stanford, May 2nd, 2016.
- Invited talk: Distinguished Lecturer of the Year, Georgia Institute of Technology, Computer Science Department, December, 2015.
- Invited talk: Distinguished Lecturer of the Year, Johns Hopkins University Computer Science Department, November 13, 2014.
- Invited talk: "Big Thinker Lecture Series" Yahoo Labs, Sunnyvale, California, March 19, 2014.
- Invited talk: Novel Privacy-Enhancing Technologies. UCLA Henry Samueli School of Engineering and Applied Science, 2012 Technology Forum, March 13, 2012.
- Invited talk: NIST Privacy Enhancing Cryptography Meeting By invitation only Workshop for Industry, Government and Academia, November 8, 2011.
- Invited talk: Success Stories and Challenges in Cybersecurity September 21, 2011, Institute of Pure and Applied Mathematics, Los Angeles.
- Invited Scholar: U.S. Air Force Third Annual National Security Scholars Conference. April 26, 2011. (Invited by the Honorable Michael B. Donley, Secretary of the Air Force.)
- Invited talk: Mathematics of Information-Theoretic Cryptography IPAM, UCLA, March 3, 2011.
- Invited talk: Trends in Theoretical Cryptography (TTC 2011) January 10-12, 2011, Tsinghua University, Beijing, China.
- Invited talk: MIT CSAIL Theory Colloquium December 7, 2010.

(*) I did not keep detailed notes of my talks prior to September 2005, the ballpark is over a hundred invited talks from 1989 to 2005.

**Recent
Invited
Talks
(cont.)**

- Invited talk: MIT Quantum Information Processing (QIP) seminar, December 6, 2010.
- Invited talk: Caltech Computing and Mathematical Sciences Lecture Series November 17, 2010.
- Invited talk: Aerospace Corporation Information Assurance Technology Department, Computers and Software Division, October 7, 2010. a 2007.
- Invited talk: 2010 Lockheed-Martin Anti-Tamper Conference, August 26, 2010, Forth Worth, Texas.
- Invited talk: 2009 Workshop on Cryptographic Protocols and Public-Key Cryptography May 24-29 2009, Bertinoro, Italy.
- Distinguished Lecturer Seminar Series, U.C. Irvine Computer Science Department, May 15, 2009.
- Plenary invited speaker at International Conference on Cyber Security 2009 organized by FBI and Fordham university.
- Plenary keynote speaker at PKC-2007 International Workshop on Practice and Theory in Public Key Cryptography, Chin
- Invited talk: Sun Microsystems, 2007 Distinguished Lecture Series, January 2007, Palo Alto, CA, USA
- Invited tutorial: Series of IPAM lectures on Private Information Retrieval September 2006, Los Angeles, CA, USA.
- Two invited tutorials at Homeland Defense and Security Conference 18-21 October 2006, Sorrento, Italy.
- Invited talk: 2006 Xerox Corporation Distinguished Lecture Series Los Angeles, July 2006. USA
- Invited talk: Workshop on Data Surveillance and Privacy Protection Workshop Harvard, June 2006.
- Invited talk: Workshop on classical and quantum information security, Caltech, December 15-18, 2005.
- Invited talk: Interdepartmental Seminar on Algorithmics University of Rome “La Sapienza”, Italy. November 21, 2005.
- Invited talk: 2005 Distinguished Cryptographer Lecture Series NTT Labs, Kanagawa, Japan, October 2005.
- Invited talk: Workshop on Cryptography and Information Security 2005 Tokyo, Japan, October 21, 2005.
- Invited talk: IEEE Information Theory Workshop on Theory and Practice in Information-Theoretic Security Awaji Island, Japan, October 16- 19, 2005.

**Recent
Invited
Talks
(cont.)**

- Invited talk: Dagshtul Workshop. Germany, October 9-14, 2005.
- Invited talk: Southern California Security and Cryptography Workshop September 24, 2005, Irvine, CA. USA
- Invited talk: Bertinoro Invited one-week course, International PhD School on Mathematical Aspects of Modern Cryptography, Bertinoro, Italy September 4-9, 2005.

Funding

• **National Science Foundation**

- (1992-1995) NSF DMS-9206267; sole PI. NSF Mathematical Sciences Postdoctoral Research Fellowship.
- (2004-2009) CNS-0430254;; co-PI. “A Survivable Information Infrastructure for National Civilian BioDefense.”
- (2007-2012) CNS-0716835; sole PI. “CT-ISG: Foundations of Position Based Cryptography”
- (2007-2012) CNS-0716389; lead PI. “Cryptographic Techniques for Searching and Processing Encrypted Data”
- (2008-2013) CNS-0830803;lead PI.
- (2009-2014) CCF-0916574 co-PI.A Theory of Cryptography and the Physical World
- (2010-2015) IIS-1065276; co-PI. III: Medium: Private Identification of Relatives and Private GWAS: First Steps in the New Field of CryptoGenomics
- (2010-2012) CCF-1016540; co-PI. CIF: Small: Energy-Efficient Scheduling and Load Balancing
- (2011-2015) CNS-1118126; PI. TC: Small: Towards Resectable and Statistical Security in Zero Knowledge
- (2011-2015) CPS-1136174 co-PI. CPS:Medium:Foundations of Secure Cyber-Physical Systems
- (2016-2019) CNS-1619348 lead-PI, SaTC-BSF: TWC: Small: Cryptography and Communication Complexity
- (2020-2023) CNS-2001096 lead-PI SaTC: CORE: Small: Collaborative: Exploring the Boundaries of Large-Scale Secure Computation

• **Defense Advanced Research Project Agency (DARPA)**

- (2020-2025) Lead PI on DARPA SIEVE program (TA3) TAMED: postT quAntuM zEro knowelDge
- (2015-2019) UCLA Subcontract to GALOIS Inc. as an evaluator (TA4) of DARPA SafeWare Program as a sole UCLA PI
- (2011-2015) I20 PROCEED program funded through the U.S. Office of Naval Research under Contract N00014-11-1-0392. “Novel Foundations of Advanced Security Technologies (N-Fast)”. Sole PI.

**Funding
(cont.)**

- **Army Research Office**
 - (2017-2018) STTR Program: *Provably secure virus protection*. PI.
- **United States-Israel Binational Science Foundation:**
 - (2016-2020) BSF-2015782; co-PI.
 - (2012-2016) BSF-2012378; co-PI.
 - (2008-2012) BSF-2008411; co-PI.
 - (2002-2008) BSF-2002354; co-PI.
- **California State Funding**
 - (2007) UC Innovation and Computer Research grant; sole PI.
- **Foundations and Industry**
 - (2020) JP Morgan Chase Faculty Award;
 - (2020) Google Faculty Award;
 - (2019) JP Morgan Chase Faculty Award;
 - (2014) Rosalinde and Arthur Gilbert Foundation Award;
 - (2012) Pazy Memorial Award;
 - (2012) Garrick Foundation Award;
 - (2007) Lockheed-Martin Corporation;
 - (2006) IBM Faculty Award;
 - (2006) Xerox Corporate Award;
 - (2005) Garrick Foundation Award;
 - (2005) Teradata Corporate Award;
 - (2004) OKAWA Foundation Award;
 - (2003) Intel Corporation Award;

Publications¹

Books

- [1] Rafail Ostrovsky. Software Protection and Simulation on Oblivious RAMs. Ph.D. Thesis. Massachusetts Institute of Technology Dept. of Electrical Engineering and Computer Science. 1992. *Software protection and simulation on oblivious RAMs*. Thesis (Ph. D.)—Massachusetts Institute of Technology, Dept. of Electrical Engineering and Computer Science, 1992.

Book/Volume Editor

- [2] Eli Ben-Sasson and Rafail Ostrovsky (editors). Special issue on the fifty-second IEEE annual symposium on foundations of computer science (FOCS 2011). *SIAM J. Comput.*, 43(2):654, 2014.
- [3] Shlomi Dolev, Rafail Ostrovsky, and Andreas Pfitzmann, editors. *Anonymous Communication and its Applications, 09.10. - 14.10.2005*, volume 05411 of *Dagstuhl Seminar Proceedings*. Internationales Begegnungs- und Forschungszentrum für Informatik (IBFI), Schloss Dagstuhl, Germany, 2006.
- [4] Rafail Ostrovsky, editor. *IEEE 52nd Annual Symposium on Foundations of Computer Science, FOCS 2011, Palm Springs, CA, USA, October 22-25, 2011*. IEEE, 2011.
- [5] Rafail Ostrovsky, Roberto De Prisco, and Ivan Visconti, editors. *Security and Cryptography for Networks, 6th International Conference, SCN 2008, Amalfi, Italy, September 10-12, 2008. Proceedings*, volume 5229 of *Lecture Notes in Computer Science*. Springer, 2008.

Book Chapters

- [6] Allan Borodin, Rafail Ostrovsky, and Yuval Rabani. In *Discrete and Computational Geometry - The Goodman-Pollack Festschrift. Algorithms and Combinatorics Series 3143*, chapter Lower Bounds for High Dimensional Nearest Neighbor Search and Related Problems, pages 255–276. Springer Verlag, Berlin, 2003.
- [7] Rafail Ostrovsky and William E. Skeith III. Private Information Retrieval: Single-Database Techniques and Applications. In G. Franceschetti and M. Grossi, editors, *Home-land Security Technology Challenges*, pages 143–176. Artech House Publishing, 2008.
- [8] Rafail Ostrovsky, Ramarathnam Venkatesan, and Moti Yung. Fair Games Against an All-Powerful Adversary (full version). In Jin-Yi Cai, editor, *DIMACS Series in Discrete Mathematics and Theoretical Computer Science, Vol. 13*, pages 155–169. AMS, 1993. This

¹In alphabetical order by publication type.

work was first presented at DIMACS Complexity and Cryptography Workshop, October 1990, Princeton, NJ.

- [9] Rafail Ostrovsky and Moti Yung. On necessary conditions for secure distributed computing. In *DIMACS Workshop on Distributed Computing and Cryptography, Feigenbaum and Merritt (eds.)*, AMS, pages 229–234. 1990.

Journal Publications

- [10] William Aiello, Eyal Kushilevitz, Rafail Ostrovsky, and Adi Rosén. Adaptive packet routing for bursty adversarial traffic. *J. Comput. Syst. Sci.*, 60(3):482–509, 2000.
- [11] Yair Amir, Paul Bunn, and Rafail Ostrovsky. Authenticated adversarial routing. *J. Cryptology*, 27(4):636–771, 2014.
- [12] Leonid Barenboim, Shlomi Dolev, and Rafail Ostrovsky. Deterministic and energy-optimal wireless synchronization. *TOSN*, 11(1):13, 2014.
- [13] Joshua Baron, Karim El Defrawy, Kirill Minkovich, Rafail Ostrovsky, and Eric Tressler. 5pm: Secure pattern matching. *Journal of Computer Security*, 21(5):601–625, 2013.
- [14] Joshua Baron, Yuval Ishai, and Rafail Ostrovsky. On linear-size pseudorandom generators and hardcore functions. *Theor. Comput. Sci.*, 554:50–63, 2014.
- [15] Nir Bitansky, Alessandro Chiesa, Yuval Ishai, Rafail Ostrovsky, and Omer Paneth. Succinct non-interactive arguments via linear interactive proofs. In *TCC*, pages 315–333, 2013.
- [16] Allan Borodin, Rafail Ostrovsky, and Yuval Rabani. Stability preserving transformations: Packet routing networks with edge capacities and speeds. *Journal of Interconnection Networks*, 5(1):1–12, 2004.
- [17] Allan Borodin, Rafail Ostrovsky, and Yuval Rabani. Subquadratic approximation algorithms for clustering problems in high dimensional spaces. *Machine Learning*, 56(1-3):153–167, 2004.
- [18] Milan Bradonjic, Eddie Kohler, and Rafail Ostrovsky. Near-optimal radio use for wireless network synchronization. *Theor. Comput. Sci.*, 453:14–28, 2012.
- [19] Mark Braverman, Ran Gelles, Jieming Mao, and Rafail Ostrovsky. Coding for interactive communication correcting insertions and deletions. *IEEE Trans. Information Theory*, 63(10):6256–6270, 2017.
- [20] Vladimir Braverman, Ran Gelles, and Rafail Ostrovsky. How to catch l_2 -heavy-hitters on sliding windows. *Theor. Comput. Sci.*, 554:82–94, 2014.
- [21] Vladimir Braverman and Rafail Ostrovsky. Effective computations on sliding windows. *SIAM J. Comput.*, 39(6):2113–2131, 2010.

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