

RESUME

Name: Shay Kutten
I.D. No.: 053432365
Date and place of birth: June 13, 1955, Afula, Israel
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ACADEMIC DEGREES

- 1981 B.A. (with distinction) in Computer Science, Technion—Israel Institute of Technology
- 1984 M.Sc. in Computer Science, Technion—Israel Institute of Technology
- 1987 D.Sc. in Computer Science from the Technion—Israel Institute of Technology

ACADEMIC APPOINTMENTS

- 1999–present Associate Professor, Faculty of Industrial Engineering and Management (Information Systems Engineering Disciplinary Area), Technion, Israel Institute of Technology, Haifa, Israel
- 1996–1999 Senior Lecturer, Faculty of Industrial Engineering and Management (Information Systems Engineering Disciplinary Area), Technion, Israel Institute of Technology, Haifa, Israel
- 1984–1987 Instructor (actively working as lecturer), Dept. of Computer Science, Technion, Israel Institute of Technology, Haifa, Israel.

PROFESSIONAL EXPERIENCE

- 1990–1994 Project Leader and Manager for Network Architecture and Algorithms and for Network Security, IBM T.J. Watson Research Center
- 1989–2000 Research Staff Member, IBM T.J. Watson Research Center (on leave of absence, 1996-1999)
- 1987–1989 Post-doctoral Fellow with IBM's T.J. Watson Research Center
- 1980–1987 Teaching assistant and instructor, Faculty of Computer Science, Technion, Israel
- 1986 Consultant in research financed by the Ministry of Communication in Israel.
Subject: Software development for computer communication

RESEARCH INTERESTS

Distributed Algorithms
Communication Networks
Distributed Systems
Algorithms for networking and communication.

TEACHING EXPERIENCE

Distributed Algorithms (graduate, designed a new course)
Introduction to Computing for managers (graduate, designed a new course)
Distributed Information Systems (graduate and undergraduate, totally redesigned the course)
Communication Networks Control (graduate and undergraduate, designed a new course)
The Design and Implementation of Information Systems (undergraduate)
Laboratory in Operations Systems (undergraduate)
Seminar in Information Systems (undergraduate)
Data Structures and Algorithms (undergraduate).

TECHNION ACTIVITIES

1996–1999 Member in the Technion Steering and Development committee for Computation and Communication
2000–2003 Head, Disciplinary Area of Information Systems Engineering, Faculty of Industrial Engineering and Management, Technion
2003–2005 Coordinator, undergraduate studies, Faculty of IE&M, Technion
2003, 2005 Coordinator, Information Systems and Knowledge Engineering major, IE program, Faculty of IE&M, Technion
2006– Judge in the court for undergraduate students.

PUBLIC PROFESSIONAL ACTIVITIES

1995–1999 Member of the editorial board, *ACM Wireless Networks Journal*
1998–2000 Member in a subcommittee of the Israeli Council for Higher Education (approval of the Communication Engineering degree in Ben Gurion University)
1999– Area Editor for Security, Reliability and Availability, *ACM Mobile Networks and Nomadic Applications*
January 2003 Journal editor of a special issue (with Paul Spirakis), *Theoretical Computer Science*, Volume 291 (1)

- 2003–2005 Member of the editorial board, *Computer Networks*
- 2003– Head of a subcommittee of the Israeli Council for Higher Education (approval of the Information Systems Engineering program of the Open University); after that, a committee that follows the program.
- March, 2006 Journal editor of a special issue of *Distributed Computing* devoted to PODC 2004, Volume 18 (4)
- 2007 Reviewer for the Israeli Council for Higher Education (approval of a graduate program in Ben Gurion University).

REVIEWING: Reviewed papers for the following journals: *Algorithmica*, *Distributed Computing*, *ACM Transactions on Algorithms*, *Computer Networks*, *IBM Systems Journal*, *IEEE Communications Magazine*, *IEEE Transactions on Communications*, *IEEE Transactions on Computers*, *IEEE Transactions on Information Theory*, *IEEE Transactions on Networking*, *IJPP*, *Information and Computation*, *IPL*, *International Journal of Parallel Programming*, *J. of Algorithms*, *JACM*, *J. of Parallel Programming*, *JPDC*, *Networks*, *SIAM J. on Computing*, *TOPLAS*, *Wireless Networks*, and others.

Also reviewed papers for FOCS, INFOCOM, SIGCOMM, SPAA, SODA, STOC, ESA, SIROCCO, ICDCS, SSS, ICFCN, ICALP, ICDCN, WEA, OPODIS, and other conferences.

Reviewed grant proposals for various agencies in Israel and abroad.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Senior member, IEEE.

HONORS

- 1981 Gutwirth Fellowship (for the B.A.).
- 1984 Gutwirth Fellowship (for the M.Sc.).
- 1984 Faculty of CS Distinction Fellowship.
- 1986 Ministry of Communication Distinction Fellowship.
- 1988 Postdoctorate Fellowship, CS Dept., IBM T.J. Watson Research Center.
- 1992 First Invention Achievement Award, IBM Research Division.
- 1992 Second Invention Achievement Award, IBM Research Division.
- 1993 Outstanding Innovation Award (OIA), IBM Corporation (for distributed information update).
- 1994 Third Invention Achievement Award, IBM Research Division.
- 1994 Fourth Invention Achievement Award, IBM Research Division.
- 1994 Outstanding Innovation Award (OIA), IBM Corporation (for Network Security).
- 1994 IBM Research Division Award, IBM Research Division (for the IBM SAMBA wireless Local Area Network).

- 1994 Supplemental Outstanding Technical Achievement Award (for the IBM Networking BroadBand Services Architecture (NBBS); this is IBM's ATM).
- 1997 Selected the Alexander Goldberg Academic Lecturer in Industrial Engineering and Management, England.
- 2001 Mitchner Second Award in Quality Sciences and Quality Management (for a set of publications on "Checkability of Software Systems, and Increasing the Dependability of Communication Networks").
- 2002 Henry Taub Award for Excellence in Research (for Dynamic Information Update and Tree Maintenance).

GRADUATE STUDENTS

Completed Theses

Sudhanshu Aggarwal (MSc). Co-supervised an M.I.T. graduate student. (First supervisor: Nancy Lynch). Time Optimal Self-Stabilizing Spanning Tree Algorithms. Graduated 1994.

Ran Soffer (MSc). Co-supervised a student at the Technion (EE). (First supervisor: Israel Cidon). Optimal Allocation of Electronic Content in Networks. Graduated 1998.

Konstantin Papernov (MSc). Co-supervised a student at the Technion (IE&M). (First Supervisor: Shay Kutten; second supervisor: Opher Etzion). Distributed Knowledge Base of Metadata. Graduated 1999.

Avner Porat (MSc). Supervised a student at the Technion (IE&M). Maintenance of a Spanning Tree in Dynamic Networks. Graduated 2002.

Yaron Spektor (MSc). Supervised a student for M.Sc at the Technion (IE&M). Peer-Weaver, a Testbed for Enhancements in Gnutella-like Networks. Graduated July 2004.

Amos Korman (PhD). Co-supervised a student at the Weizmann Institute. (First Supervisor: David Peleg). Static and Dynamic Labeling Schemes. Graduated: 2005.

David Ben Ami (MSc). Co-Supervised a student at the Technion (IE&M). (First Supervisor: Shay Kutten; second supervisor: Onn Schori). A Comparative Evaluation of Agent Location Mechanisms in Large Scale MAS. Graduated 2005.

Lior Zoref (MSc). Co-supervised a student at the Technion (IE&M). (First Supervisor: Shay Kutten; second supervisor: David Bregmann). A Model for Connecting Mobile Devices and PCs in Home Networks (the Connected Home). Graduated 2006.

Ayelet Yifrach (MSc). Supervised a student at the Technion (IE&M). Improved Distributed Exploration of Anonymous Networks. Graduated 2006.

Theses in progress

Janna Borman (PhD). Designing Self Stabilizing Time Adaptive Algorithms for Distributed System. Expected completion date: 2009.

Erez Michalak (M.Sc). Level of Synchrony Adaptivity in Shared Counter Access. Expected completion day: 2008.

Alex Kravchik (M.Sc). Faster Self Stabilization (proposal in preparation).

Postdoctorates

Esther Jennings (finished 1998)

Danny Hendler (finished 2006)

Amos Korman (finished 2007).

RESEARCH GRANTS

1. “Self Stabilizing Network Protocols”, funded by the Israel-France Foundation for Research, 1996–8 (Project Leader, and Principal Investigator). My share: \$36913. (The other PI: Prof. Joffroy Beauquier, Univ. Paris Sud). (The ranks and the affiliations of the PIs are given here for the time of the grant.)
2. “Communication Algorithms in Optical Networks”, funded by the Israel-France Foundation for Research, 1996–8 (A Weizmann Inst. grant, Principal Investigator at the Technion). My share: \$5000. (Other PIs: Prof. Jean Claude Bermond, Sophia Antipolis, Prof. David Peleg, Weizmann.)
3. “Distributed Search, Control, and Management on the Web”, funded by the MAGNET Consortium for Multi-Media (Principal Investigator), 1996–9. (Another PI: Prof. David Peleg, Weizmann.)
4. “Dynamic Resource Allocation”, funded by the MAGNET Consortium for Broad-Band Networks (Principal Investigator). 1996–8.
5. “Research on Scheduling in Optical Networks”, funded by the Strategic Infrastructure Research, Israeli Ministry of Science, 1997–2000 (Principal investigator). My share: \$19026+\$20629+\$20629. (Other PIs: Senior Lec. Shlomi Dolev, BGU, Assoc. Prof. Amotz Bar-Noy, Senior Lec. Dan Sadot, BGU, Prof. Yaron Silberberg, Weizmann, Prof. Moshe Tur Tel Aviv University.)
6. “Adaptation of Economical Models to the Internet”, funded by the Strategic Infrastructure Research, Israeli Ministry of Science, 1997–2000 (Principal investigator). My share: \$142995+\$151494+\$151582. (Other PIs: Lec. Yossi Ben Asher. Haifa Univ., Assoc. Prof. Dov Monderer Technion, Assoc. Prof. Moni Naor, Weizmann, Senior Lec. Doron Sonsino, Technion, Senior Lec. Moshe Tenenholtz, Technion.)
7. “Peer-to-Peer: a Combined Adaptive Stabilization and Game Theoretic Approach”, funded by the Israel Science Foundation—the Bikura “Special” path (Principal Investigator), 2003–2005. My share: \$33250+\$17500. (The Other PI: Prof. Dov Monderer.)
8. “Management of Radio Resources”, funded by the MAGNET Consortium REMON, 2004–2006 (Principal Investigator). 75,000 shekel per researcher per year. (The other PI: Prof. Yishay Mansour, Tel Aviv Univ.)

9. “Energy Saving Protocols in Sensor Networks by Localizing Data Computing and Transmissions”, funded by the Ministry of Science, “Strategic Infrastructure Research” (Principal Investigator). My share: 110,000 shekel (\$25,232) for 2005; 106,000 for 2006; 106,000 shekel for 2007. (The other PIs: Assco. Prof. Boaz Patt-Shamir, Tel Aviv Univ., Prof. David Peleg, Weizmann, Assoc. Prof. Assaf Schuster, Technion.)
10. “Highly Concurrent Implementation of Concurrent Objects”, funded by the SUN Corporation (Principal Investigator), 2005–, \$5000.
11. “Congestion Aware Complexity for the Emerging Paradigms in Distributed Computing”, funded by the Israel Science Foundation (Principal Investigator), 2006–2010. My share: 108,000 shekel per year. (The other PI: Prof. Nir Shavit, Tel Aviv Univ.)

SIGNIFICANT PROFESSIONAL PROJECTS

- 1987–1991, Initiated and participated in the design and analysis of the higher layer protocols for the IBM PARIS experimental fast network.
- 1988–1991, Participated in designing the architecture and algorithms, hardware and software, of IBM plaNET fast network as a part of the US national Aurora Gigabit testbed. This technologies were implemented in the IBM first Storage Area Network (SSA and ANSI X3.293-1996).
- 1988–1994, Initiated and led the security project of the Communication Department and participated in the development of network security mechanisms for IBM’s networks, including protocols for SNA session authentication protocols, consulting to IBM divisions on security, required hardware for Cryptographic operations, and more.
- 1989–1992, Participated in the design of the IBM NBBS (Networking Broad Band Services) ATM architecture and SNA architecture, including topology and utilization update, multicasting, internetworking, security and more. (Received IBM Outstanding Innovation Award for contributions in designing control protocols.)
- 1990–1994, Led the IBM T.J. Watson Network Security Project that developed, among other things, authentication protocols. The Internet payment protocol is based, to a large degree on protocols patented in this project. (For patent 92480018.8. in my list of patents below IBM had to issue a royalty free license so that this protocol can be adapted by the Internet.)
- 1990–1994, Led the Network Architecture and Algorithms group, that participated in the algorithmic parts of other IBM projects such as IBM’s local area networks, design of wireless networks, wireless networks, optical networking, consulted to IBM divisions and other groups in research, and more.
- 1991–1993, Led the protocol design for the NetSP security server product. (Received IBM Outstanding Innovation Award for NetSP.)
- 1992–1994, Led the development of the security architecture and protocols of the IBM SAMBA wireless network. (Received IBM Research Division Award.)
- 1994–1995, Participated in the design of the protocols for Phoenix, the IBM product for workstations group computing.

PUBLICATIONS

Theses

1. S. Kutten, “Efficient Methods for Distributed Leader Election and Spanning Tree Construction”, D.Sc. dissertation. Advisor: Prof. S. Moran (replaced by Dr. S. Zaks in a year when Prof. Moran was on a sabbatical); additional advisor: Dr. E. Korach.
2. S. Kutten, “On Broadcasting and Spatial Reuse in Multihop Radio Networks—Problem Analysis and the Design of Protocols with Provable Properties”, M.Sc. thesis. Advisor: Prof. I. Chlamtac.

Refereed Papers in Professional Journals

(* papers co-authored with students; ** my students; † other students)

1. I. Chlamtac and S. Kutten, “On Broadcasting in Radio Networks: Problem Analysis and Protocol Design”, *IEEE Transactions on Communications*, Vol. COM-33, No. 12, December 1985.
2. I. Chlamtac and S. Kutten, “Tree Based Broadcasting in Multihop Radio Networks”, *IEEE Transactions on Computers*, Vol. C-36, No. 10, October 1987.
3. R. Bar-Yehuda and S. Kutten, “Fault-Tolerant Majority Commitment”, *Journal of Algorithms*, Vol. 9, pp. 568–582, 1988.
4. S. Kutten, “Optimal Fault-Tolerant Distributed Construction of a Spanning Forest”, *Information Processing Letters*, Vol. 27, pp. 299–307, May 1988.
5. E. Korach, S. Kutten, and S. Moran, “A Modular Technique for the Design of Efficient Distributed Leader Finding Algorithms”, *ACM Transactions on Programming Languages and Systems*, Vol. 12, No. 1, pp. 84–101, 1990.
6. A. Itai, S. Kutten, Y. Wolfstahl, and S. Zaks, “Optimal Distributed t -Resilient Election in Complete Networks”, *IEEE Transactions on Software Engineering*, Vol. 16, No. 4, April 1990.
7. R. Bird, I. Gopal, A. Herzberg, P. Janson, S. Kutten, R. Molva, and M. Yung, “Systematic Design of Two Party Authentication Protocols”, *IEEE J. on Selected Areas in Communications*, Vol. 11, No. 5, pp. 679–693, June 1993.
8. B. Awerbuch, S. Kutten, and D. Peleg, “On Buffer Economical Store and Forward Deadlock Prevention”, *IEEE Transactions on Communications*, Vol. 42, No. 11, November 1994.
9. A. Bar-Noy, F.K. Hwang, I. Kessler, and S. Kutten, “A New Competitive Algorithm for Group Testing”, *Discrete Applied Math.*, Vol. 52, pp. 29–38, 1994.
10. I. Cidon, S. Kutten, Y. Mansour, and D. Peleg, “Greedy Packet Scheduling”, *SIAM J. on Computing*, Vol. 24, No. 1, pp. 148–157, February 1995.
11. I. Cidon, I. Gopal, M. Kaplan, and S. Kutten, “A Distributed Control Architecture of High-Speed Networks”, *IEEE Transactions on Communications*, Vol. 43, No. 5, pp. 1950–1960, May 1995.
12. R. Bird, I. Gopal, A. Herzberg, P. Janson, S. Kutten, R. Molva, and M. Yung, “The KryptoKnight Family of Light-Weight Protocols for Authentication and Key Distribution”, *IEEE Transactions on Networking*, Vol. 3, No. 1, pp. 31–42, February 1995.
13. I. Cidon, I. Gopal, and S. Kutten, “New Models and Algorithms for Future Networks”, *IEEE Transactions on Information Theory*, Vol. 41, No. 3, pp. 769–780, May 1995.
14. J. Garay, I. Gopal, S. Kutten, Y. Mansour, and M. Yung, “Efficient On-Line Call Control Mechanism”, *Journal of Algorithms* Vol. 23, No. 1, pp. 180–194, April 1997.

15. Y. Afek, S. Kutten and M. Yung, “The Local Detection Paradigm and its Applications to Self Stabilization”, *Theoretical Computer Science* (special issue), Vol. 186, No. 1–2, pp. 199–230, 1997.
- *16. C. Blundo[†], A. De Santis, A. Herzberg, S. Kutten, U. Vaccaro, and M. Yung, “Perfectly-Secure Key Distribution for Dynamic Conferences”, *Information and Computation*, Vol. 146, No. 1, pp. 1–23, October 1998.
17. J. Garay, S. Kutten, and D. Peleg, “A Sub-Linear Time Distributed Algorithm for Minimum Weight Spanning Trees”, *SIAM Journal on Computing*, Vol. 27, No. 1, pp. 302–316, February 1998.
18. S. Kutten and D. Peleg, “Fast Distributed Construction of k -Dominating Sets and Applications”, *Journal of Algorithms*, Vol. 28, No. 1, pp. 40–66, 1998.
- *19. A. Gopal[†], I. Gopal, and S. Kutten, “Fast Broadcast in High Speed Networks”, *IEEE Transactions on Networking*, Vol. 7, No. 2, pp. 262–275, 1999.
20. B. Awerbuch, I. Cidon, S. Kutten, Y. Mansour, and D. Peleg, “Optimal Broadcast with Partial Knowledge”, *SIAM Journal on Computing*, Vol. 28, No. 2, pp. 511–524, 1999.
21. S. Kutten and D. Peleg, “Fault-Local Distributed Mending”, *Journal of Algorithms*, Vol. 30, pp. 144–165, 1999.
- *22. A. Bar-Noy, R. Canetti[†], S. Kutten, Y. Mansour, and B. Schieber, “Bandwidth Allocation with Preemption”, *SIAM Journal on Computing*, Vol. 28, pp. 1806–1828, 1999.
23. S. Kutten, and B. Patt-Shamir “Time Adaptive Self Stabilization”, *Theoretical Computer Science*, Vol. 220, No. 1, pp. 93–111, 1999.
24. O. Gerstel, G. Sasaki, S. Kutten, and R. Ramaswami, “Worst-Case Analysis of Dynamic Wavelength Allocation in Optical Networks”, *IEEE/ACM Transactions on Networking*, Vol. 7, No. 6, pp. 833–846, 1999.
25. S. Kutten, and D. Peleg, “Tight Fault Locality”, *SIAM Journal on Computing*, Vol. 30, No. 1, pp. 247–268, 2000.
26. S. Kutten, B. Patt-Shamir, and R. Ostrowsky, “The Las-Vegas Processor Identity Problem (How and When to be Unique)”, *Journal of Algorithms*, Vol. 37, No. 2, pp. 468–494, 2000.
27. A. Herzberg and S. Kutten, “Early Detection of Message Forwarding Faults”, *SIAM Journal of Computing*, Vol. 30, No. 4, pp. 1169–1196, 2000.
- *28. D. Sadot, Y. Nachmani[†], A. Bar-Noy, and S. Kutten, “Next Generation Tbit/Sec Routers and Switches: Traffic Modeling, Scheduling Algorithms, and Simulations”, *J. of High Speed Networks*, Vol. 11, No. 2, pp. 89–102, 2002.
- *29. I. Cidon, S. Kutten, and R. Soffer**, “Optimal Allocation of Electronic Content in Networks”, *Computer Networks*, Vol. 40, No. 2, pp. 205–218, October 2002 (invited and reviewed).

30. S. Kutten, D. Peleg, and U. Vishkin, “Deterministic Resource Discovery in Distributed Networks”, *Theory of Information Systems (TOCS)*, Vol. 36, No. 5, pp. 479–495, 2003. A special issue (by invitation) devoted to selected papers from the 13th ACM Symposium on Parallel Algorithms and Architectures (SPAA’2001).
31. J. Auerbach, P.M. Gopal, M. Kaplan, and S. Kutten, “Multicast Group Membership Management in High Speed Wide Area Networks”, *IEEE/ACM Trans. on Networking*, Vol. 11, No. 1, pp. 166–175, February 2003.
32. S. Kutten and D. Peleg, “Deterministic Resource Discovery in Asynchronous Overlay Networks”, *Computer Networks*, Vol. 51, No. 1, pp. 190–206, January 2007.
33. S. Das†, P. Flocchini, S. Kutten, A. Nayak, and N. Santoro. 2007. Map construction of unknown graphs by multiple agents. *Theoretical Computer Science* 385, 1-3 (October 2007).
34. O. Gerstel, S. Kutten, E. Laber, R. Matichin, D. Peleg, A. Pessoa, and C. Souza, “Hotlink Enhancement Algorithms for Web Directories”, *ACM Transactions on Information Systems (TOIS)*, Vol. 25, No. 4 (October 2007).
35. B. Awerbuch, S. Kutten, Y. Mansour, B. Patt-Shamir, and G. Varghese, “A Time Optimal Self-Stabilizing Synchronizer Using a Phase Clock”, *IEEE Transactions on Dependable and Secure Computing (TDSC)* 4(3): 180-190 (2007).

Accepted

36. A. Korman** and S. Kutten, “Distributed Verification of Minimum Spanning Trees”, to appear in *Distributed Computing* (in the special issue that will be devoted to ACM PODC 2006).
37. B. Awerbuch, I. Cidon, and S. Kutten, “Optimal Maintenance of a Spanning Tree”, to appear in *The Journal of the ACM (JACM)*.

Pending Minor Changes

38. Y. Azar, B. Patt-Shamir, and S. Kutten, “Distributed Error Confinement”, submitted to *ACM Transactions on Algorithms (TALG)*.

Submitted

- *39. A. Korman**, S. Kutten, and D. Peleg, “Proof Labeling Schemes” (submitted to *J. Dist. Comp. Journal*, revised according to reviewers’ comments).
- *40. A. Korman** and S. Kutten, “On Models for Graph Representations”, submission invited to a special issue of *TCS*, devoted to *SIROCCO’2007*.

*41. D. Hendler** and S. Kutten, “Bounded-Wait Combining: Constructing Robust and High-Throughput Shared Objects”, being revised according to reviewers comments.

*42 A. Korman** and S. Kutten, “Controller and Estimator for Dynamic Networks”, submitted.

BOOKS

1. S. Kutten (Ed.), Distributed Computing (12th International Symposium, DISC’98, Andros, Greece, September 1998, Proceedings). Springer Lecture Notes in Computer Science No. 1499 (ISBN 978-3-540-65066-9).
2. S. Kutten (Ed.), Proceedings of the Twenty-Third Annual ACM Symposium on Principles of Distributed Computing, St. John’s, Canada, 1994, ACM, (ISBN 1581138024).

PATENTS

1. R.F. Bird, I.S. Gopal, P.A. Janson, S. Kutten, R. Molva, and M. Yung, “Authentication Protocols in Communication Networks”, US Patent number 5148479 (9/92), European patent number 92480018.8. Also Issued as patent number 2059172 in CA (1/16/96). Also issued as patent number 505302 in Fr (8/28/96). Also issued as patent number 6921306.4 in GE (8/28/96). Also issued as patent number 505302 in IT (8/28/96). Also issued as patent number 505302 in the UK (8/28/96).
2. D. Coppersmith, H. Krawczyk, A. Herzberg, S. Kutten, and Y. Mansour, “The Shrinking Generator: A New Pseudo Random Generator for Stream Cipher Cryptosystems”, European patent number 94104002.4 (5/10/94). Filed as Docket YO993005 in the US (4/8/93).
3. E. Dal Bello, D. Bantz, F. Bauchot, O.C. Davidson, A. Herzberg, S. Kutten, and Y. Mansour, “Synchronization Procedures for Wireless Local Area Network”. Filed as Docket FR992039 in France (12/3/93). European patent 93480210.9 (2/9/94).
4. R.F. Bird, A. Herzberg, P.A. Janson, S. Kutten, R.E. Molva, and M. Yung, “Multi-Party Secure Session/Conference”. Issued as patent number 5,369,705 in the USA (11/29/94).
5. J.S. Auerbach, J.E. Drake, P. Gopal, E.A. Hervatic, M.A. Kaplan, S. Kutten, M.L. Peters, and M.J. Ward, “Distributed Management Communication Networks”, European patent 93480056.6. Issued as patent number 5634011 in the USA (5/97). Issued as patent NI-65914 in TA (8/22/94). Also issued as patent number 0000659546 in the USA (9/5/95). Also issued as patent number 659546 in AS (95/5/93). Also issued as patent number 2503189 in JA (3/13/96).
6. I. Cidon, J.P. Janniello, J.H. Derby, J.G. Dudley, D.W. Davenport, I.S. Gopal, F.R. Koperda, M.A. Kaplan, S. Kutten, and K.H. Potter Jr., “Methods and Apparatus for Routing Packets in Packet Transmission Networks”. Issued as US patent number 5309433 (5/3/94). European patent 93480059.0 (7/93). Also issued as patent 0654930 in AS (3/14/95). Also issued as patent 00NI-71875 in TA. Also issued as patent number 0000033717 in RC (6/14/93).

7. R. Bodner, C.-S. Chow, I. Cidon, G. Dudley, A. Edwards, I. Gopal, P. Immanuel, M. Kaplan, S. Kutten, and T. Tedijanto, “Reliable Multicasting Over Spanning Trees in Packet Communications”, US patent 5459725 (10/17/95).
8. A. Herzberg, H.M. Krawczyk, S. Kutten, and Y. Mansour, “Secure Message Authentication for Binary Additive Stream Cipher Systems”, US patent 5345507 (9/6/94). European patent 94113889.3 (11/3/94).
9. F. Bauchot, R.E. Bjorklund, A. Herzberg, S. Kutten, and M. Wetterwald, “A Method and System for Key Distribution and Authentication in a Data Communication Network”. European patent 93480219.0 (2/8/94). Issued as patent number 5539824 in the USA (7/23/96). Canadian patent number 2,130,396 (3/98).
10. A. Herzberg, H. Krawczyk, S. Kutten, S.M. Matyas, and M. Yung, “Methods for the Secure Distribution of Multimedia”. Issued as patent number 5,745,678 in the USA (4/28/98).
11. A. Herzberg, S. Kutten, and M. Yung, “Method and Apparatus for Authenticating Users of a Communication System to Each Other”. Issued as patent number 5202921 in the USA (4/13/93). Also, issued as patent number 0002075782 in JA (7/25/96).
12. C.S. Chow, S. Kutten, and M. Yung, “A Method to Deter Document and Intellectual Property Piracy Through Individualization”. Issued as patent number 5,699,427 in the USA (12/16/97).
13. F. Bauchot, Dal Bello, D. Bantz, A. Herzberg, H. Krawczyk, S. Kutten, and Y. Mansour. “Exchange Certificate for One Way Validation of Information”. Issued as Patent number 5515439 in the US (5/7/96).
14. F. Bauchot, Dal Bello, D. Bantz, H. Krawczyk, and S. Kutten “Dynamic user registration method in a mobile communications network”. Issued as Patent number 5,519,706 in the US (5/21/96).

CONFERENCES

Invited Talks

- WDAG’91 (The conference was meanwhile renamed the International Symposium on DIStributed Computing (DISC)), “Control Algorithms for Fast Networks”, Delphi, Greece, October 7–9, 1991.
- SOFSEM Conference, “Scalable Fault Tolerance” (see also below a reference to the invited paper in the proceedings), Czech Republic, November 23–30, 1996.
- Workshop on Algorithm Engineering as a New Paradigm 2000, RIMS, “On Time Adaptivity and Stabilization”, Kyoto University, Kyoto, Japan, October 30–November 2, 2000.
- XXXI Spring School in Theoretical Computer Science, “Stabilization and Locality”, Porquerolles, France, May 4–8, 2003.
- The First DYNAMO Workshop (Introductory talk for the Peer-to-Peer track), “Structuring Overlay Networks in Parallel”, Paris, France, May 19–20, 2005.

- 4th IEEE International Conference on Information Technology: Research and Education (Keynote speaker), “Locality in Distributed Fault Tolerance”, Tel Aviv, October 16–19, 2006.
- 8th International Symposium on Distributed Computing and Networking (ICDCN’2006) (Keynote speaker), “On Distributed Verification”, Guwahati, India, December 27–30, 2006.
- 5th ACM SIGACT SIGOPS International Workshop on Foundation of Mobile Computing (DIAL M-POMC) (Keynote Speaker), the conference is to be held in Toronto, August 2008 (co-located with PODC 2008 and CONCUR 2008).

Refereed Papers in Conference Proceedings*

1. I. Chlamtac and S. Kutten, “An Efficient Broadcast Protocol Embedded in Multihop Radio Networks”, Proceedings of the IEEE COMPCON Fall’84, Arlington, Virginia, USA, pp. 220–229, September 1984.
2. S. Kutten and Y. Wolfstahl, “Finding a Leader in a Distributed System where Elements May Fail”, Proceedings of the 17th Ann. IEEE Electronic and Aerospace Conference (EASCON), Washington, DC, pp. 101–104, September 1984.
3. S. Kutten, “A Unified Approach to the Construction of Efficient Distributed Leader Finding Algorithms”, Proceedings of the 3rd International IEEE Conference on Communication and Energy, Montreal, Canada, October 1984.
4. I. Chlamtac and S. Kutten, “A Spatial Reuse TDMA/FDMA for Mobile Multihop Radio Networks”, Proceedings of the IEEE INFOCOM’85, Washington, DC, USA, March 1985.
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Steering Committee Member

- The International EATCS Symposium on DIStributed Computing (DISC), 1998–2003.
- The ACM Symposium on Principles of Distributed Computing (PODC), 2003–2006.

Program Committee Chair

- The 12th International Symposium on DIStributed Computing (DISC'98), formerly known as WDAG, 1998.
- The 23rd ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing (PODC'04), 2004.
- The First IEEE International Workshop on Foundations and Algorithms for Wireless Networking (FAWN'06), 2006.
- The 15th International Colloquium on Structural Information and Communication Complexity (SIROCCO'09), 2009 (planned).

Program Committee Member

- 10th International Symposium on Distributed Computing and Networking (ICDCN'09), Jan. 2009.
- 22nd International Symposium on Distributed Computing (DISC 2008), September 22-24, 2008, Arcachon, France.
- The 4th IEEE International Conference on Distributed Computing in Sensor Networks (DCOSS 2008).
- DYNAMO 2007, Workshop on Dynamic networks Salerno, Italy, May 7-8, 2007.
- ninth International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS'2007).
- FUN 2007—4th International Conference on Fun with Algorithms, Castiglioncello (LI), Tuscany, Italy, June 3–6, 2007.
- Data Processing in Ubiquitous Information Systems 2007—a Workshop of ICDE'07.
- Ninth International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS'2007).
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- 5th IEEE International Symposium on Network Computing and Applications, IEEE NCA'06, July 2006, Cambridge, Massachusetts.
- EATCS 4th Workshop on Efficient and Experimental Algorithms (WEA'05), Santorini Island, Greece, May 10–13 2005.
- ICDCS'04 The 23rd International Conference on Distributed Computing Systems.
- The 21st Symposium on Reliable Distributed Systems (SRDS'2002), sponsored by the IEEE Computer Society.

- ARACNE2002: 3rd Workshop on Approximation and Randomization Algorithms in Communication Networks, Rome, September 21, 2002.
- The First Workshop on Advanced Parallel and Distributed Algorithms (APDA'2002).
- The SIROCCO conferences (International Colloquium on Structural Information and Communication Complexity) of 2000, 2005, and 2008.
- ICE-98—First International Conference on Information and Computational Economics. Co-sponsored by IBM, NSF, ACM, and IEEE.
- ISTCS 1996—Israel Symposium on the Theory of Computing and Systems.
- IS&T/SPIE (The Society for Imaging Science and Technology and the International Society for Optical Engineering) 1994 Symposium on Electronic Imaging and Technology (The High Speed Networking and Multimedia Computing Conference; Co-sponsored by the IEEE Computer Society).
- PODC Conferences (Association for Computing Machinery, Symposium on the Principles of Distributed Computing) of 1993, 1994, and 2000.
- WDAG Conferences of 1991, 1992, 1994, and 1996 (this is the former name of the EATCS DISC (European Association of Theoretical Computer Science DISC—Symposium on DIStributed Computing)).

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