

## MICHA HOFRI — LIST OF PUBLICATIONS

### A. Theses

- (1) Master's Thesis: Hamiltonian Formalism of Spin-0 and Spin-1 Particles, 1965.  
(In Hebrew, with a separate English Summary).
- (2) Doctoral Thesis: Queueing Problems in Multiprogramming Computer Systems, 1972.  
(In Hebrew, with a separate English Summary).

### B. Books and Chapters

- (1) *PROBABILISTIC ANALYSIS OF ALGORITHMS: On Computing Methodologies for Computer Algorithms Performance Evaluation*. Springer-Verlag, New York 1987.  
Republished by the World Publishing Corporation in Beijing, 1991.
- (2) *OPERATING SYSTEMS* (in Hebrew) – the Open University Press, 1989.
- (3) M. Hofri: Reduced State-Space Heuristics for Symmetric Markovian Queueing Systems. In O.J. Boxma, R. Syski (Eds.): *Queueing Theory and its Applications*, Liber Amicorum for J.W. Cohen, North-Holland Amsterdam, 1988.
- (4) E.G. Coffman Jr., M. Hofri: "Queueing Models for Scheduling Secondary Storage Devices" in H. Takagi (Ed.) *Stochastic Analysis of Computer and Communications Systems*, Elsevier Science Publishers B.V. (North-Holland), 1989.
- (5) *ANALYSIS OF ALGORITHMS: Mathematical Methods & Computational Tools*. Oxford University Press, 1995.

### C. Journal Publications (Refereed)

- (1) M. Hofri, A. Peres: Matrix Elements for Polarized Fermion Scattering, *Nuclear Physics*, **59**, 618–624, (1964).
- (2) M. Hofri, E. Shlifer: Comments on "Queueing Systems with Transport Service Processes". *Trans. Sc.*, **4**, 111–112, (1970).
- (3) I. Adiri, M. Hofri and M. Yadin: A Multiprogramming Queue. *Jour. of the ACM*, **20**, 589–604, (1973).
- (4) M. Hofri, M. Yadin: A Processor in Series with Demand-Interrupting Devices – A Stochastic Model. *Jour. of the ACM*, **22**, 270–290, (1975).
- (5) M. Hofri: Stochastic Scheduling Design in Multiserver Systems. *SIAM Journal on Control*, **13**, 736–748, (1975).
- (6) J. Bruno, M. Hofri: On Scheduling Chains of Jobs on one Processor with Limited Preemption. *SIAM J. Comp.*, **4**, 478–490, (1975).
- (7) M. Hofri, M. Yadin: Multiprogramming with Virtual Memory – A Queueing Model. *Inf. Sciences*, **11**, 178–221, (1976).
- (8) M. Hofri: On Certain Output-Buffer Management Techniques – A Stochastic Model. *Jour. of the ACM*, **24**, 241–249, (1977).
- (9) M. Hofri: Multiprogramming Queues and the Analysis of their Steady-State Behaviour. *The International Journal of Computer and Information Sciences*, **7**, 121–155, (1978).
- (10) E.G. Coffman, Jr., M. Hofri: A Class of FIFO Queues Arising in Computer Systems. *Opns, Res.*, **26**, 864–880, (1978).

- (11) E.G. Coffman, Jr., M. Hofri, Kimming, So., A.C. Yao: A Stochastic Model of Bin Packing. *Inf. and Control*, **44**, 105–115, (1980).
- (12) M. Hofri: Two Dimensional Packing: Expected Performance of Simple Level Algorithms. *Inf. and Control*, **45**, 1–17, (1980).
- (13) M. Hofri: Disk Scheduling: FCFS Vs. SSTF Revisited. *Comm. of the ACM*, **23**, 645–653, (1980). Corrig. **24**, p. 772, (1981).
- (14) M. Hofri: On the Probability on Intercepting a Pulsed Signal with Periodic Equipment. *Computers and Operations Research*, **8**, 49–55, (1981).
- (15) E. G. Coffman Jr., M. Hofri: On the Expected Performance of Scanning Disks. *SIAM J. Comp.* **11**, 60–70, (1982).
- (16) M. Hofri, P. Tzelnic: On the Working Set Size for the Markov Chain Model of Program Behavior. *SIAM J. on Comp.* **11**:3, 453–466, (1982).
- (17) M. Hofri: Should the Two-Headed Disk be Greedy? – Yes, it should! *Inf. Proc. Lett.* **16**, 83–85, (1983).
- (18) M. Hofri: Analysis of Interleaved Storage via a Constant-Service Queueing System with Markov-Chain Driven Input. *Jour. of the ACM*, **31**:3, 628–648, (1984).
- (19) M. Hofri: A Probabilistic Analysis of the Next-Fit Bin Packing Algorithm. *J. of Algorithms*, **5**, 547–556, (1984).
- (20) G. Fayolle, P. Flajolet, M. Hofri, P. Jacquet: Analysis of a Stack Algorithm for Random Multiple Access Communication. *IEEE Trans. on Inf. Th.*, **IT-31**:2, 244–254, (1985).
- (21) M. Hofri, Z. Rosberg: Optimally Controlled CCD Shift Registers (Optimal Interception On A Recurrent Trajectory). *Stochastic Models*, **1**:3, 341–360, (1985).
- (22) G. Fayolle, Philippe Flajolet, M. Hofri: On a Functional Equation Arising in the Evaluation of a Protocol for Multiaccess Broadcast Collision Channel. *Adv. Appl. Probab.* **18**, 441–472, (1986).
- (23) M. Hofri, S. Kamhi: A Stochastic Analysis of the NFD Bin-Packing Algorithm. *J. of Algorithms*, **7**, 489–509, (1986).
- (24) E.G. Coffman Jr., M. Hofri: Queueing Models of Secondary Storage Devices. *Queueing Systems*, **1**, :2, 129–168, (1986).
- (25) M. Hofri, Keith W. Ross: On the Optimal Control of Two Queues with Server Setup Times and Its Analysis. *SIAM J. on Comp.* **16**:2, 399–420, (1987).
- (26) M. Hofri, Z. Rosberg: Packet Delay under the Golden Ratio Weighted TDM Policy in a Multiple-Access Channel. *IEEE Trans. on Inf. Th.* **IT-33**:3, 341–349, (1987).
- (27) M. Hofri, A.G. Konheim: Padded Lists Revisited. *SIAM J. on Comp.* **16**:6, 1073–1114, (1987).
- (28) E.G. Coffman Jr., M. Hofri, G. Weiss: Scheduling Stochastic Jobs with a Two Valued Distribution on Two Parallel Processors. *Probability in the Engineering and Informational Sciences* **3**:1, 89–116, (1989).
- (29) M. Hofri, H. Shachnai: On the Optimality of the Counter Scheme for Dynamic Linear Lists. *Inf. Proc. Lett.*, **37**, 175–179, (1991)
- (30) M. Hofri, H. Shachnai: Self-Reorganizing Lists and Independent References — a Statistical Synergy. *Jour. of Algo.*, **12**, 533–555 (1991).
- (31) D. Aldous, M. Hofri, W. Szpankowski: Maximum Size of a Dynamic Data Structure: Hashing with Lazy Deletions Revisited. *SIAM Jour. Comp.*, **21**:4, 713–732, (1992).
- (32) M. Hofri, H. Shachnai: The Application of Restricted Counter Schemes to Three Models of Linear Search. *Probab. in Eng. Inf. Sc.*, **6**, 371–389, (1992).

- (33) M. Hofri, H. Shachnai: On the Limited Utility of Auxiliary Information in the List Update Problem. *Stochastic Models*, **8**:4, 637–650 (1992).
- (34) M. Hofri, Y. Kogan: Asymptotic Analysis of Product-Form Distributions Related to Large Interconnection Networks. *Theor. Comp. Sc.*, **125**, 61–90 (1994).
- (35) M. Hofri: On Timeout for Global Deadlock Detection in Decentralized Database Systems. *Information Processing Letters*, **51**, 295–302, (1994).
- (36) A. Boneh, M.Hofri: The Coupon-Collector Problem Revisited — A Survey of Engineering Problems and Computational Methods. *Stochastic Models*, **13**, #1 39–66 (1997).
- (37) E.G. Coffman Jr., Ph. Flajolet, L. Flatto, M. Hofri: The Maximum of a Random Walk and Its Application to Rectangle Packing. *Probab. in Eng. Inf. Sc.*, **12**, 373–386 (1998).
- (38) M. Hofri, Ph. Jacquet: Saddle Points in Random Matrices: Analysis of Knuth Search Algorithms. *Algorithmica*, **22**, #4 516–528 (1998).
- (39) H. Shachnai, M. Hofri: The List Update Problem – Improved Bounds for the Counter Scheme. *Algorithmica*, **22**, #4 650–659 (1998).
- (40) M. Hofri, David L. Thomson: Matrix Transposition on a Mesh with Blocking Transmissions. *Parallel Processing Letters*, **8**,#4 561–566 (1998).
- (41) M. Hofri, H. Shachnai: Efficient Reorganization of Binary Search Trees. *Algorithmica*, **31**, #3 378–402 (2001).
- (42) M. Hofri: Optimal Selection and Sorting via Dynamic Programming. Submitted for publication, June 2011.

#### D. Papers Delivered in Refereed Conferences

*Note:* This list does not include papers that were subsequently published in journals, with no material changes.

- (1) M. Hofri: Queueing Phenomena at Computing Systems Storage Devices. Presented in the 6th Annual Conference on Stochastic Processes and their Applications, Tel Aviv, June 1976.
- (2) E.G. Coffman, Jr., M. Hofri: On Scanning Disks and the Analysis of their Steady State Behaviour, Feb. 1977. (In H. Beilner and E. Gelenbe (eds.), *Modelling and Performance Evaluation of Computer Systems*, North Holland, 1977 – Proc. of the identically named Conf. in Bonn, 4–6 October 1977.) A revised version of this work was published as item C15.
- (3) M. Hofri: Disk Scheduling: FCFS vs. SSTF Revisited. Presented in the 2nd Inter. Symp. on Operating Systems, IRIA – France, 2–4 October 1978. An expanded version is published in the *Comm. of the ACM* (1980), item C14.
- (4) M. Hofri, A.G. Konheim: The Analysis of a Finite Quasi-Symmetric ALOHA Network with Reservation.  
Presented in the International Seminar on Computer Communications, Zürich, March 1984. Published in the conference proceedings: "Performance of Computer-Communications Systems", Eds.: W. Bux, H. Rudin. North-Holland Amsterdam 1984 505–525.
- (5) I. Gold, O. Shmueli, M. Hofri: The Private Workspace Model Feasibility and Applications to 2PL Performance Improvement. Proc. VLDB Conf. October 1985 Stockholm, Sweden.
- (6) M. Hofri: Queueing Systems with a Procrastinating Server.  
Presented in "Performance '86/ACM Sigmetrics 1986, Joint Conference on Computer Performance Modelling, Measurement and Evaluation", North Carolina State University, May 28–30, 1986. Published in the conference proceedings, issued as Special Issue of the *Performance Evaluation Review*, **14**, #1, May 1986, 245–253.
- (7) M. Hofri: Two Queues and One Server with Threshold Switching. TR#376, Department of Computer Science, The Technion, Haifa, Israel, October 1985. Also published in: O.J. Boxma, J.W. Cohen, H.C. Tijms (Eds.), *Proceedings of the International Seminar on Teletraffic Analysis and Computer Performance Evaluation*, Elsevier Science Publishers B. V. (North-Holland), 409–428, 1986. held at the Centre for Mathematics and Computer Science, Amsterdam, The Netherlands. June 2–6, 1986.
- (8) M. Hofri, H. Shachnai: Reordering Lists Optimally and Synergistically.  
SIAM Conference on Applied Probability in Science and Engineering. March 5–7, 1990. New Orleans, LA.
- (9) M. Hofri, Y. Kogan: Exact and Asymptotic Analysis of Large Multiple-Bus Multiprocessor Systems.  
Performance '90, September 12–14, 1990. Edinburgh, Scotland.
- (10) M. Hofri, H. Shachnai: Efficient Reorganization of Binary Search Trees.  
CIAC '94, Rome, Italy. February 23–25, 1994.
- (11) S. Battiato, D. Cantone, D. Catalano, G. Cincotti, and M. Hofri: An Efficient Algorithm for the Approximate Median Selection Problem. 4th CIAC 2000, Rome, Italy. March 1–3, 2000. Published in the conference proceedings, LNCS 1767, 226–238, Springer Heidelberg, 2000. A revised version is available as WPI-CS-TR-99-26.

## E. Invited presentations at conferences and Workshops

- (1) On the probabilistic analysis of bin packing heuristics (based on the paper C.19). Delivered at the NATO Advanced Study and Research Institute on Theoretical Approaches to Scheduling Problems, held in Durham England, July 6–17 1981.
- (2) A Queueing Analysis of Congestion at Interleaved Storage Systems. Adapted from the paper C.18 and presented at the Oberwolfach "Applied Stochastic Processes" week during 17–23 January, 1982.
- (3) Stack Algorithms for Collision-Detecting Channels and Their Analysis: A Limited Survey. In F. Baccelli, G. Fayolle (Eds.): *Modelling and Performance Evaluation Methodology*. Proceedings of the International Seminar, Paris, January 1983. Published as Vol. 60 in the Lecture Notes in Control and Information Sciences Series by Springer-Verlag. 71–88.
- (4) Stochastic Analysis of Simple Bin-Packing Algorithms. Presented at the Oberwolfach "Applied Stochastic Processes" week, April 29 – May 3, 1985.
- (5) Computational Probability and Analysis of Algorithms. At the 3rd Intl. Conf. on Statistics in the Basque Country, Bilbao Spain. August 7–9 1985.  
Also available as an INRIA Rapport de Recherche #433.
- (6) A Feedback-less Distributed Broadcast Algorithm for Multihop Radio Networks with Time-Varying Structure. Presented at the 2nd International Workshop on APPLIED MATHEMATICS and PERFORMANCE/ RELIABILITY MODELS of COMPUTER/COMMUNICATIONS SYSTEMS, University of Rome II May 25–29, 1987 Rome, Italy. Proceedings published by North-Holland Co., pp. 353–368, (1988). Also available as TR#451, Department of Computer Science, The Technion, Haifa, Israel.
- (7) a) Self-Organizing Lists and Independent References — a Statistical Synergy. (Also available as TR#524)  
b) Analyzing a Packet Switch as a Non-Conservative Exhaustive-Service Polling System. I: Cycle Time and Capacity Analysis. (Also available as TR#527, Department of Computer Science, The Technion, Haifa, Israel).  
Presented in the Annual Conference of the Dutch OR Society, February 1989.
- (8) Hashing, Lazy Deletions and the Maximum Length of Queues.  
Presented in the IFIP WG 7.3 meeting in Lattrop, the Netherlands, 2/27–3/1/1990.
- (9) On the Statistical Properties of Binary Search Trees and Their Dynamic Reorganization.  
Presented in the IFIP WG 7.3 Workshop in Rome, Italy, 9/28–10/2/1993.
- (10) An Efficient Algorithm for the Approximate Median Selection Problem. Co-authored with S. Battiato, D. Cantone, D. Catalano and G. Cincotti, Universita di Catania, Dipartimento di Matematica, Catania, Italy.  
Presented in the Fifth Seminar on Mathematical Analysis of Algorithms, Bellaterra, Spain, 6/14–18, 1999.
- (11) Optimal Selection via Dynamic Programming.  
Presented at the 22nd International Meeting on Probabilistic, Combinatorial, and Asymptotic Methods in the Analysis of Algorithms (AofA'11), Poznan, 6/12–18, 2011.

## F. Sundry professional publications and presentations

- (1) Encyclopaedia Hebraica: Articles on Software and Programming (in Hebrew). 1980
- (2) M. Hofri, N. Amit: A Simple Semaphore-Queue Management for Multiprocessing System. *Operating Systems Review*, **14**, #3 13–15 (1980).

- (3) "Latency Reduction" in *Fundamentals Handbook of Electrical and Computer Engineering*, Vol. III 294–297. John Wiley and Sons, 1983.
- (4) M. Hofri: Proof of a Mutual Exclusion Algorithm — A ‘Class’ic Example. *Operating Systems Review* **24**, #1 18–22 (1990).
- (5) M. Hofri: "Algorithm Analysis". *Dr. Dobb’s Journal*, **20**, #3, 125–6 (1995).
- (6) M. Hofri: "Binary Search". *Dr. Dobb’s Journal*, **21**, #2, 135–8 (1996).
- (7) “What is Computer Science?” Presented to the WPI ACM student Chapter, November 27, 2001.
- (8) Feller’s Lament. Presented in the WPI CS Theory Seminar, February 3, 2005.
- (9) "On the analysis of an Algorithm for Approximate Median Selection." Presented on October 3, 2005, Projet ALGO seminar, INRIA.
- (10) "Approximating the median and the weighted median", January 15, 2007. Presented in the WPI CS Theory Seminar.
- (11) Letter to the Editor: "Service Transparency Considered Harmful" *Operating Systems Review* **41**, #4 77 (2007).
- (12) "Analysis of approximate median selection," Colloquium at the Dept. of CS, Technion Haifa, June 18, 2008.

## G. Selected Technical Reports

Note: Reports that have since been published in journals or conference proceedings are not included below.

- (1) E.G. Coffman Jr., M. Hofri: Queueing Models of Secondary Storage Devices. Department of Computer Science, Purdue University, TR#943, January 1990. (An update of the Chapter B.3)
- (2) M. Hofri, N. Kechris: Probabilistic Counting of Large Number of Events. Department of Computer Science – University of Houston TR #UH-CS-92-23.
- (3) M. Hofri, H. Shachnai: Efficient Reorganization of Binary Search Trees. Department of Computer Science – Rice University, October 1996, TR96-267.
- (4) M. Hofri, C. E. Wills; 1999 Computer Science Department MQP Review. August, 1999. WPI-CS-TR-99-24.
- (5) M. Hofri, C. E. Wills; 2001 Computer Science Department MQP Review. September, 2001. WPI-CS-TR-01-18.
- (6) D. Cantone, G. Cincotti, M. Hofri: An Efficient Approximate Algorithm for the  $k$ -th Selection Problem. September 2006, WPI-CS-TR-06-16.
- (7) Domenico Cantone, Micha Hofri: Analysis of An Approximate Median Selection Algorithm. September 2006, WPI-CS-TR-06-17.
- (8) M. Hofri: On the distribution of a Saddle-point Value in a Random Matrix. September 2006, WPI-CS-TR-06-18.