

Resume of **ORAN SHARON**

36 Hashoshanim Street
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Education:

D.Sc. degree in Computer Science ,**1994**

Technion, IIT, Haifa, Israel

Research subject:

Protocols for Spatial and Slot Reuse in Bus Networks

Research: Distributed algorithms, MAC protocols for wired and wireless networks.

M.Sc. degree in Computer Science, **1988**

Technion, IIT, Haifa, Israel

Research subject:

Models for address distribution and session management in

Broadcast networks with dynamic addresses.

B.Sc. degree in Computer Science, with honors, **1986**

Technion, Israel Institute of Technology (IIT), Haifa, Israel

Employment Record:

2008 – 2011

Consultant : to an industrial company in issues related to the relation between the PHY and MAC layers in order to enable efficient transmission on a Wireless link.

2001 –

Senior lecture – Netanya Academic College

Courses:

1. Digital Systems

2. Introduction to Computer Networks

*ARQ protocols, 802.3 – Ethernet, 802.11 – WLAN, 802.1d - Bridging
Introduction to TCP/IP*

3. IP Networking 1

DNS , Unicast routing (RIP, OSPF, BGPv4)

Multicast routing (DVMRP, MOSPF, PIM-SM, PIM-DM, CBT)

TCP – reliability, performance (NewReno, Limited transmit, SACK)

Sockets

The Web

4. IP Networking 2

QoS – IntServ, DiffServ

RSVP

MPLS

- BGP/MPLS VPNs*
Network Security (Symmetric, Public Key Crypt, Hash functions, IPSec, SSL)
IP Telephony : H.323, SIP
IPv6
Mobile IPv4, Mobile IPv6
5. **Seminar** – *Scheduling policies (WFQ, WF²Q etc.)* .

1998-2001

ECI Telecom - Datacom Scientist, advisor.

The position included learning various new subjects in TCP/IP such as *VPNs, MPLS, QoS* and evaluating their relevance and importance to the company products.

Another issue was to follow after the standardization process regarding the control plane (*GMPLS*) of optical networks (*OTN*) in order to eventually incorporate the standards into the optical products of the company.

1995-1998

Dr. Instructor -

Haifa University;

Tel Aviv University;

Courses:

1. **Introduction to Computer Networks**
2. **The Assembly language of the 80x86 processors**
3. **High Speed Networks - Architecture and protocols**

1995

Consultant - Network Technology Department, HP Labs, Bristol, England

Involved in two projects:

1. The design of a compatible *CSMA/CD MAC protocol for a Home LAN*. Included the specification of the protocol, proof of correctness and performance analysis by mathematical analysis and simulation (by BONeS).
2. ***The design of a MAC protocol for a Wireless LAN (WLAN) for classrooms.*** The protocol is a novel variation of Polling schemes which enables simultaneous transmissions of control and data packets. Included the specification of the protocol, correctness proof and performance evaluation.

1987 - 1994

Teaching assistant - Computer Science Faculty
Technion, IIT, Haifa, Israel

Courses:

1. **Introduction to Programming**
2. **Introduction to Optimization**
3. **Introduction to Computer Networks**

1985 - 1986

Nikuv Ltd. Software House
Ha'atzmaut Road 112, Haifa, Israel

Awards:

The *Gutwirth award* for excellence in research – 1991

Haifa University – *Rector and Dean of the students award for excellence in teaching* : 2003 , 2004

Netanya Academic College – *Award for excellence in teaching* : 2015

Patents:

" A CSMA/CD compatible MAC for real-time transmissions based on varying collision intervals "

Inventors: O. Sharon, M. Spratt; Applicant: Hewlett Packard company.

Books:

Co-author of the book '*Data Communications*' - serves as a text book for High Schools. Publisher - Ministry of Education, Israel.

M.Sc. Students (Completed theses) :

3. **A. Liron,**
" **Efficient coupled PHY and MAC use of Physical Bursts by ARQ-Enabled connections in WiMAX/IEEE 802.16e Networks**" , 2014
2. **G. Tabajha,**
"Efficient Coupled PHY and MAC use of Physical Bursts in WiMAX/IEEE 802.16e Networks " , 2012
1. **A. Likholat,**
"On the relation between the throughput gain with slot reuse and the number of address bits in the Dual Bus configuration", 2001

Publications in Journals:

33. **O. Sharon, Y. Alpert,**
" **Advanced IEEE 802.11ax TCP aware scheduling under unreliable channels "**
International Journal on Communication Systems Vol.32, Issue14 (2019)
32. **O. Sharon, Y. Alpert,**
" **Optimizing TCP Goodput and Delay in Next Generation IEEE 802.11 (ax) Devices "**
Transactions on Networks and Communications Vol. 6 No. 4 (2018) pp. 14-40
31. **O. Sharon, Y. Alpert,**
" **Scheduling strategies and throughput optimization for the Downlink for IEEE 802.11ax and IEEE 802.11ac based networks "**
Wireless Sensor Networks 9 (2017) pp. 355-383
30. **O. Sharon, Y. Alpert**
" **Scheduling Strategies and Throughput optimization for the Uplink for IEEE 802.11ax and IEEE 802.11ac based networks "**
Wireless Sensor Networks 9 (2017) pp. 250-273
29. **O. Sharon, Y. Alpert,**
" **Single User MAC level Throughput comparison: IEEE 802.11ax vs. IEEE 802.11 ac"**
Wireless Sensor Networks 9 (2017) pp. 166-177
28. **O. Sharon, Y. Alpert,**
" **Comparison between TCP scheduling strategies in IEEE 802.11ac based Wireless networks "**
Ad Hoc Networks 61C(2017) pp. 95-113
27. **O. Sharon, Y. Alpert,**
" **A New Aggregation based Scheduling method for rapidly changing 802.11ac Wireless channels "**
Wireless Sensor Networks 8(8) (2016) 145-165
26. **O. Sharon, Y. Alpert,**
" **Coupled IEEE 802.11ac and TCP Goodput improvement using Aggregation and Reverse Direction "**
Wireless Sensor Networks 8(7) (2016) 107-136
25. **O. Sharon, Y. Alpert,**
" **Coupled IEEE 802.11ac and TCP performance evaluation in various aggregation schemes and Access Categories"**
Computer Networks 100 (2016) 141-156
24. **O. Sharon, Y. Alpert,**
" **The combination of aggregation, ARQ, QoS guarantee and mapping of Application flows in Very High Throughput 802.11ac networks "**
Physical Communication 17 (2015) 15-36
23. **O. Sharon, Y. Alpert,**
" **The combination of QoS , aggregation and RTS/CTS in Very High Throughput 802.11ac networks "**
Physical Communication 15 (2015) 25-45
22. **O. Sharon, Y. Alpert,**

- " MAC level Throughput comparison: 802.11ac vs. 802.11n ",
Physical Communication 12 (2014) 33-49
21. **O. Sharon, A. Liron, Y. Alpert,**
" Efficient coupled PHY and MAC use of physical bursts by ARQ-enabled connections in WiMAX/IEEE 802.16e networks"
Physical Communication 10 (2014) 72-105
 20. **O. Sharon, Y. Alpert,**
"Physical and Medium Access Control criteria for the optimal Medium Access Control protocol data unit size in Automatic Repeat Request-enabled connections in IEEE 802.16e/WiMAX systems",
International Journal of Communication Systems 27(2014) 3292-3311
 19. **O. Sharon, G. Tabajha, Y. Alpert,**
"Efficient coupled PHY and MAC use of physical Bursts in WiMAX/IEEE 802.16e networks", *Physical Communication 7 (2013) 73-91*
 18. **Y. Alpert, J. Segev O. Sharon,**
"Towards an optimal transmission of SDUs in IEEE 802.16e/WiMAX systems", *Physical Communication 7 (2013) 44-60*
 17. **Y. Alpert, J. Segev, O. Sharon,**
"Coupled PHY, MAC and repetition scheduling in IEEE 802.16 WiMAX systems",
Physical Communication 7 (2013) 14-29
 16. **Y. Alpert, J. Segev, O. Sharon,**
"Advanced coupled PHY and MAC scheduling in IEEE 802.16e WiMAX systems", *Physical Communication 3(2010) 287-298*
 15. **A. Israeli, O. Sharon,**
"An approximation algorithm for sequential rectangle placement",
Information Processing Letters 108 (2008) 407-411
 14. **A. Israeli, D. Rawitz, O. Sharon,**
"On the Complexity of Sequential Rectangle Placement in IEEE 802.16/WiMAX Systems", *Information and Computation, 206(11) (2008) 1334-1345*
 13. **O. Sharon, A. Vainstein, A. Likholat,**
"On the relation between the throughput gain with slot reuse and the number of address bits in the dual bus configuration, Part 2: Linear and equal throughputs", *Computer Systems, Science & Engineering journal, 17 (4) (2002) 237-251*
 12. **O. Sharon, A. Likholat,**
"On the relation between the throughput gain with slot reuse and the number of address bits in the dual bus configuration, Part 1: Maximum throughput", *Computer Systems, Science & Engineering journal, 17 (4) (2002) 223-236*
 11. **O. Sharon, E. Altman,**
"An Efficient Polling MAC for Wireless LANs",
ACM/IEEE Transactions on Networking, 10(4) (2001) 439-451
 10. **O. Sharon, M. Spratt,**
"A CSMA/CD compatible MAC for real-time transmissions based on varying collision intervals", *Computer Networks 35 (2-3) (2001) 117-142*
 9. **O. Sharon,**
"Dissemination of Routing Information in Broadcast Networks:OSPF versus IS-IS", *IEEE Network journal 15(1) (2001) 56-65*

8. **O. Sharon, A. Segall,**
"Session management in broadcast networks with dynamic addresses",
Computer Networks 31 (23-24) (1999) 2489-2503
7. **O. Sharon,**
"On the Relation Between Bit Delay for Slot Reuse and the Number of
Address Bits in the Dual Bus Configuration", *IEEE Transaction on
Information Theory* 45 (1) (1999) 356-365
6. **O. Sharon,**
"A Proof for Lack of Starvation in DQDB With and Without Slot Reuse",
ACM/IEEE Transactions on Networking 5(3) (1997) 410-419
5. **O. Sharon, A. Segall,**
"The Parallel D-Net", *Computer Communication* 18 (8) (1995) 552-562
4. **O. Sharon, A. Segall,**
"Schemes for Slot Reuse in a Dual Bus System with the CRMA II MAC",
Journal of High Speed Networks 4 (3) (1995) 239-254
3. **O. Sharon, A. Segall,**
"Schemes for Slot Reuse in CRMA", *ACM/IEEE Transactions on
Networking* 2 (3) (1994) 269-278
2. **O. Sharon, A. Segall,**
"On the Efficiency of Slot Reuse in the Dual Bus Configuration",
ACM/IEEE Transactions on Networking 2 (1) (1994) 89-100
1. **O. Sharon, A. Segall,**
"A Simple scheme for Slot Reuse Without latency for a Dual Bus
Configuration ",
ACM/IEEE Transactions on Networking, 1 (1) (1993) 96-104

Publications in Conferences:

11. **O. Sharon, A. Liron, Y. Alpert,**
"Efficient coupled PHY and MAC use of Physical Bursts by ARQ-Enabled
connections in WiMAX/IEEE 802.16e Networks" , *Proceedings of the
Wireless Information Networks and Systems (WINSYS) (2013) 191-198*
10. **O. Sharon, G. Tabajha, Y. Alpert,**
"Efficient Coupled PHY and MAC use of Physical Bursts in WiMAX/IEEE
802.16e Networks", *Proceedings of the Wireless Information Networks and
Systems (WINSYS) (2012) 343-348*
9. **O. Sharon, Y. Alpert,**
"Optimal MAC PDU size in ARQ-Enabled connections in WiMAX/IEEE
802.16e Networks", *Proceedings of the Wireless Information Networks and
Systems (WINSYS) (2012) 315-322*
8. **A. Israeli, D. Rawitz, O. Sharon,**
"On the Complexity of Sequential Rectangle Packing in IEEE
802.16/WiMax Systems", *Proceedings of the European Symposium on
Algorithms (ESA) (2007) 570-581*
7. **O. Sharon,**
"A CSMA/CD compatible MAC for real-time transmissions based on

- varying collision intervals", *Proceedings of the IEEE International Conference on Computer Communications (INFOCOM) (1998) 1265-1272*
6. **O. Sharon,**
"On the relation between bit delay for Slot Reuse and the number of address bits in the Dual Bus Configuration", *Proceedings of the 16th Annual ACM Symposium on the Principles of Distributed Computing (PODC) (1997) 294-294*
 5. **O. Sharon,**
"An Efficient Polling MAC for Wireless LANs ",
Proceedings of the High Performance Computing Systems Workshop (HPCS) (1997) 91-100
 4. **O. Sharon, A. Segall,**
"A proof for lack of starvation in DQDB with and without Slot Reuse",
Proceedings of the IEEE International Conference on Computer Communications (INFOCOM) (1995) 1880-1888
 3. **O. Sharon, A. Segall,**
"On the efficiency of Slot Reuse in the Dual Bus configuration ", *Proceedings of the IEEE International Conference on Computer Communications (INFOCOM) (1994) 758-765*
 2. **O. Sharon, A. Segall,**
" Schemes for Slot Reuse in a Dual Bus system with the CRMA II MAC ",
Proceedings of the 6th IEEE Workshop on Local and Metropolitan Area Networks (1993) 27-47
 1. **O. Sharon, A. Segall,**
"A Simple scheme for Slot Reuse Without latency inDual Bus ",
Proceedings of the IFIG WG6.1/WG6.4 Third International Workshop on Protocols for High Speed Networks III (1992) 103-118

Reference:

Available upon request.

Personal:

Born in Israel, 1961

Single

Citizenship:

Israeli