

Alon Efrat — Curriculum Vitae

Department of Computer Science
University of Arizona
Tucson, AZ 85721

Email: alon@cs.arizona.edu
Phone: (520) 626-8047, Fax: (520) 621-4246
Web page: www.cs.arizona.edu/people/alon

Education

- 1998 Ph.D. Computer Science, Tel-Aviv University, Israel
Thesis: *Optimal Geometric Location Problems*
Advisor: Prof. Micha Sharir
- 1993 M.Sc. Computer Science, The Technion, Israel
Thesis: *Maintaining the Smallest Enclosing Circle*
Advisors: Prof. Alon Itai and Prof. Reuven Bar-Yehuda
- 1991 B.Sc. Applied Mathematics, Mathematics Department, The Technion, Israel

Professional Experience

- 2000 - present Assistant Professor, Computer Science Department, University of Arizona
- 2000 - 2002 Visiting Researcher and Consultant, IBM Almaden Research Center
- 1999 - 2000 Post Doctorate Research Fellow (Sponsor: Leonidas Guibas), Stanford University
- 1994 - 1998 Instructor, Computer Science Department, Tel-Aviv University, The Technion, Israel

Awards and Grants

- 2005 ACIST: Video Browsing with application for KUAT programs. With Kobus Barnard. \$95,000
- 2005 NSF: Databases for moving objects for the *Large Synoptic Survey Telescope (LSST)*. With Kobus Barnard and Bongki Moon. \$205,000.
- 2004 NSF REU Supplement: ITR/Collaborative Research: Intelligent Topology Control and Energy Provisioning for Wireless Video Sensor Networks. \$6,000
- 2004 NSF CAREER Grant 0348000. Pattern Matching, Realistic Input Models and Sensor Placement. Useful Algorithms in Computational Geometry. Duration 2004–2007. \$403,000
- 2003 NSF Grant 0312443 — ITR/Collaborative Research: Intelligent Topology Control and Energy Provisioning for Wireless Video Sensor Networks. With Steve Pink (Co-PI)
Duration is 2002-2005. \$122,126.
- 2002 NSF Grant 0222920 — Visualization of Giga-Graphs and Graph Processes. With Stephen Kobourov (PI) and James Abelo. Duration is 2002-2005. \$240,000.
- 2002 Honda Research Laboratory (a gift with Joe Mitchell (co-PI)), \$55,000
- 1998 The Rothschild Fellowship, Israel (Post Doctorate Fellowship), \$24,000.
- 1998 The Minerva Fellowship Israel—Germany (Post Doctorate Fellowship)
- 1998 The Chateaubriand Fellowship, French (Post Doctorate Fellowship)
- 1996 The Maus prize and grant for distinguished graduate students, Tel-Aviv University, \$3000

Services to the community

- On the editorial board of the *International Journal of Computational Geometry and Applications (IJCGA)*.
- continued the work on the special issue of the *International Journal of Computational Geometry and Applications (IJCGA)* dedicated to selected papers from the 21th. ACM Symp. of Computational Geometry 2005, which I am a guest editor.
- Conference local chair, the 22th ACM Symposium of Computational Geometry (**SoCG**), Sedona, 2006.
- Program Committee member for the 21th. ACM Symposium of Computational Geometry (**SoCG**) 2005 .
- Program Committee member of the IEEE 3rd Int. conf. on Broadband Communication, Networks and systems. (**BROADNET**) 2006.
- Program Committee member of the IEEE International Conference on Communications 2007, Wireless Adhoc and Sensor Networks Symposium (**WAS ICC**).
- A guest editor of the special issue of the *International Journal of Computational Geometry and Applications (IJCGA)* dedicated to selected papers from the 21th. ACM Symposium of Computational Geometry (SoCG) 2005.
- Together with Subhash Suri and Leo Guibas, we organized the *NSF Workshop on Geometric Approaches to Ad Hoc and Sensor Networks*, an NSF-funded workshop aiming to bring together leading researchers of ad Hoc and Sensor Networks and those of computational geometry, computational topology, and combinatorial optimization.
- NSF panel review, 2005.
- NSF panel review, 2006 (twice).
- Reviewed papers for most of the major conferences and journals in theoretical computer science, and many others.

Students and Post-Doctorate Researchers

Jesus Arango, PhD candidate. 2005–2006.

Cesim Erten, Post-Doctorate research assistant. 2004–2005. Currently an assistant professor at the Computer Science and Engineering Department at Isik University in Turkey.

Carola Wenk, Post-Doctorate research assistant. 2000-2001. Currently an assistant professor at the Computer Science Department at the University of Texas at San-Antonio.

Lingesh Palaniappan, Master student. 2001–2003. Currently at Microsoft.

In addition, worked with Quanfu Fan (a PhD candidate in our department) and many other graduate and undergraduate students.

List of Publications

A. Patents

1. Buddy Tracking — A system for proximity alerts between friends. US 2004/0198398.

B. Papers in Journals

1. P.K. Agarwal, A. Efrat, M. Sharir and S. Toledo, Computing a segment-center for a planar point set, *J. Algorithms* 15 (1993), 314–323.
2. A. Efrat, M. Sharir and G. Rote, On the union of fat wedges and separating a collection of segments by a line, *Computational Geometry: Theory and Applications (CGTA)* 3 (1994), 277–288.
3. A. Efrat and C. Gotsman, Subpixel image registration using circular fiducials, *International J. of Computational Geometry and Applications* 4 (1994), 403–422.
4. A. Efrat, M. Sharir and A. Ziv, Computing the smallest k -enclosing circle and related problems. *Computational Geometry: Theory and Applications (CGTA)* 4 (1995), 119–136.
5. A. Efrat and M. Sharir, A near-linear algorithm for the planar segment center problem, *Discrete and Computational Geometry (DCG)* 16 (1996), 239–257.
6. A. Efrat and O. Schwarzkopf, Separating and shattering long line segments. *Information Processing Letters (IPL)* 64 (1998), 309–314.
7. L.P. Chew, D. Dor, A. Efrat and K. Kedem, Geometric pattern matching in d -dimensional space, *Discrete and Computational Geometry (DCG)* 21 (1999) 257–274.
8. A. Efrat and M.J. Katz, On the union of κ -curved objects, *Computational Geometry: Theory and Applications (CGTA)* 14 (1999), 241–254.
9. A. Efrat and M. Sharir, On the complexity of the union of fat objects in the plane, *Discrete and Computational Geometry (DCG)* 23 (2000), 171–189.
10. P.K. Agarwal, A. Efrat and M. Sharir, vertical decomposition of shallow levels in 3-dimensional arrangements and its applications, *SIAM J. Computing* 29 (2000), 912–953.
11. A. Efrat, M.J. Katz, F. Nielsen and M. Sharir, dynamic data structures for fat objects and their applications, *Computational Geometry: Theory and Applications (CGTA)* 15 (2000), 215–227.
12. A. Efrat and M.J. Katz, Computing an Euclidean bottleneck matching in higher dimension. *Information Processing Letters (IPL)*, 4 (2000), 169–174.
13. A. Efrat, M.J. Katz and A. Itai, Geometry helps in bottleneck matching and related problems, *Algorithmica* 1 (2001), 1–28.
14. A. Amir, A. Efrat, P. Indyk and H. Samet, efficient algorithms and regular data structures for dilation, location and proximity problems, *Algorithmica* 30 (2001), 166–187.
15. B. Aronov, A. Efrat, D. Halperin and M. Sharir, a subquadratic bound on the number of regular vertices of the union of Jordan regions, *Discrete and Computational Geometry (DCG)* 25 (2001), 203–220.
16. T. Chan and A. Efrat fly cheaply: on the minimum fuel-consumption problem. *J. Algorithms* 41 (2001), 330–337.
17. N. Davis, K. Cheverst, K. Mitchell and A. Efrat, using and determining location in a context-sensitive tour guide: the guide experience, *IEEE computers* 34 (2001), 35–41.

18. A. Efrat, F. Hoffmann, K. Kriegel, C. Schultz and C. Wenk, geometric algorithms for the analysis of 2D-Electrophoresis gels, *Journal of Computational Biology (JCB)*, (special issue dedicated to papers from RECOMB 2001), 9 (2002), 299–316.
19. A. Efrat, L. J. Guibas, S. Har-Peled, J. S. B. Mitchell and T.M. Murali. new similarity measures between polygons with applications to morphing and polygon sweeping, *Discrete and Computational Geometry (DCG)* 28 (2002), 535–569.
20. A. Efrat, F. Hoffmann, K. Kriegel, C. Knauer, G. Rote and C. Wenk, covering shapes by ellipses *Algorithmica (special issue on shape algorithms)* 38 (2003), 145–160.
21. A. Amir and S. Srinivasan, Search the audio, browse the video — a generic paradigm for video collections. *EURASIP Journal on Applied Signal Processing*, 2 (2003), 209–222.
22. H. Alt, A. Efrat, G. Rote and C. Wenk, matching planar maps, *J. Alg.* 49 (2003) 262–283.
23. A. Efrat, the Complexity of the union of (α, β) -covered objects, *SIAM J. Computing* 34 (2005), 755–787.
24. A. Efrat, P. Indyk and S. Venkatasubramanian, pattern matching for sets of segments, *Algorithmica* 40(2004), 147-160.
25. A. Efrat, S. Kobourov and A. Lubiw, computing homotopic shortest paths efficiently, *Computational Geometry: Theory and Applications (CGTA)* to appear.
26. B. Aronov, A. Efrat, V. Koltun and M. Sharir, On the union of κ -round objects in three and four dimensions, *Discrete and Computational Geometry (DCG)* (special issue dedicated to *Proc. 20th Annual Symposium on Computational Geometry (SoCG)*). To appear.
27. P. Brass, E. Cenek, C. A. Duncan, A. Efrat, C. Erten, D. Ismailescu, S. G. Kobourov, A. Lubiw and J. S. B. Mitchell, On Simultaneous, Planar Graph Embeddings, *Computational Geometry: Theory and Applications (CGTA)*, to appear.
28. A. Efrat, L.J. Guibas and O.A. Hall-Holt and L. Zhang, On Incremental Rendering of Silhouette Maps of a Polyhedral Scene. *Computational Geometry: Theory and Applications (CGTA)* to appear.
29. O. Cheong, A. Efrat and S. Har-Peled, on finding a guard that sees most and a shop that sells most, *Discrete and Computational Geometry (DCG)* to appear.
30. A. Efrat, C. Erten and S. Kobourov. Fixed-location circular arc drawings, *Journal of Graph Algorithms and Applications*, to appear.
31. A. Efrat and S. Har-Peled, locating guards in art galleries, *Information Processing Letters (IPL)*, to appear.
32. C. A. Duncan, A. Efrat, S. G. Kobourov and C. Wenk, drawing with fat edges, *International Journal of Foundations of Computer Science (IJFCS) Special Issue of on Graph Drawing*. To appear.
33. A. Amir, A. Efrat, J. Myllymaki, L. Palaniappan and K. Wampler, Buddy tracking — efficient proximity detection among mobile friends, *Pervasive and Mobile Computing*, to appear after revision.
34. A. Efrat, Q. Fan and S. Venkatasubramanian, curve matching, time warping, and light fields, new algorithms for computing similarity between curves, *J. Mathematic Imaging and Vision*, to appear.
35. Y.T. Hou, Y. Shi, J. Pan, A. Efrat, and S.F. Midkiff, maximizing lifetime of wireless sensor networks through optimal single-session flow routing, in *IEEE Transactions on Mobile Computing*, to appear.

36. R. Kraft, M. Escobar, M. Narro, J. Kurtis, A. Efrat, K. Barnard, and L. Restifo, phenotypes of *Drosophila* brain neurons in primary culture reveal a role for fascin in neurite shape and trajectory *The Journal of Neuroscience*, to appear.

C. Papers in Proceedings of Peer-Reviewed Conferences

1. A. Efrat, M. Sharir and A. Ziv, computing the smallest k -enclosing circle and related problems. *Proc. Third Workshop Algorithms Data Struct. (WADS) LNCS* 1993, vol. 709, 325–336.
2. A. Efrat and C. Gotsman, subpixel image registration using circular fiducials, *Proc. of the second Israeli Symposium on Theory of Computing and Systems* 1994, 127–136.
3. A. Efrat and M. Sharir, near-linear algorithm for the planar segment center problem, *Proc. 5th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)* 1994, 87–97.
4. P.K. Agarwal, A. Efrat and M. Sharir, vertical decomposition of shallow levels in 3-dimensional arrangements and its applications, *Proc. 11th Annual Symposium on Computational Geometry (SoCG)*, 1995, 39–50.
5. L.P. Chew, D. Dor, A. Efrat and K. Kedem, geometric pattern matching in d -dimensional space, *3rd European Symposium on Algorithms (ESA), LNCS* vol. 979, 1995, 264–279.
6. A. Efrat and A. Itai, improvements on bottleneck matching and related problems, using geometry. *Proc. 12th Annual Symposium on Computational Geometry (SoCG)*, 1996, 301–310.
7. A. Efrat and M.J. Katz, computing most-uniform and minimum deviation matchings in geometric settings. *Proc. 7th Annual International Symposium on Algorithms and Computational (ISAAC)*, 1996, 115–125.
8. A. Efrat and O. Schwarzkopf, separating and shattering long line segments, *Proc. 7th Annual International Symposium on Algorithms and Computational (ISAAC)*, 1996, 36–44.
9. A. Efrat and M. Sharir, on the complexity of the union of fat objects in the plane, *Proc. 13th Annual Symposium on Computational Geometry (SoCG)*, 1997, 104–112.
10. A. Efrat, M.J. Katz, F. Nielsen and M. Sharir, dynamic data structures for fat objects and their applications. *Proc. 5th Workshop on Algorithms and Data Structures (WADS)*, 1997, 297–396.
11. A. Efrat and M.J. Katz, on the Union of α -curved Objects, *Proc. 14th Annual Symposium on Computational Geometry (SoCG)*, 1998, 206–213.
12. A. Efrat and S. Har-Peled, fly Cheaply: on the Minimum fuel-consumption problem, *Proc. 14th Annual Symposium on Computational Geometry (SoCG)*, 1998, 143–145.
13. B. Aronov, A. Efrat, D. Halperin and M. Sharir, a subquadratic bound on the number of regular vertices of the union of Jordan regions. *Proc. 6th Scand. Workshop on Algorithms Theory (SWAT)*, 1998, 322–334.
14. A. Efrat, The complexity of the union of (α, β) -covered objects, *Proc. 15th Annual Symposium on Computational Geometry (SoCG)*, 1999, 134–142.

15. A. Amir, A. Efrat, P. Indyk and H. Samet, efficient algorithms and regular data structures for dilation, location and proximity problems, *Proc. 40 Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, 1999, 160–170.
16. H. H. Gonzalez-Banos, E. Mao, J.C. Latombe, T. M. Murali and A. Efrat, planning robot motion strategies for efficient model construction, *Proc. 9th International Symposium of Robotics Research*, 2000, 345-352.
17. A. Efrat, L.J. Guibas, O.A. Hall-Holt and L. Zhang, on incremental rendering of silhouette maps of a polyhedral scene. *Proc. 11th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2000, 910–917.
18. A. Efrat, L.J. Guibas, S. Har-Peled, D.C. Lin, J.S.B. Mitchell, T.M. Murali. sweeping simple polygons with a chain of guards, *Proc. 11th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2000. 297–936.
19. A. Efrat, P. Indyk and S. Venkatasubramanian. pattern matching for sets of segments. *Proc. 12th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2001, 295–304.
20. A. Efrat, S. Har-Peled, L. Guibas and T.M. Murali, morphing between curves, *Proc. 12th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2001, 680–689.
21. A. Efrat, F. Hoffmann, K. Kriegel, C. Schultz and C. Wenk. geometric algorithms for the analysis of 2D-Electrophoresis gels, *The Fifth Annual International Conference on Computational Molecular Biology (RECOMB)*, 2001, 114-123.
22. C. A. Duncan, A. Efrat, S. G. Kobourov and C. Wenk, Drawing with Fat Edges, *Graph Drawing (GD)* 2001. LNCS vol. 2265, 162–177.
23. A. Amir, A. Efrat and S. Srinivasan, developments in phonetic word retrieval, *ACM Tenth International Conference on Information and Knowledge Management (CIKM) 2001* , 580–582.
24. A. Efrat, F. Hoffmann, K. Kriegel, C. Knauer, G. Rote and C. Wenk, covering shapes by ellipses *Proc. 13th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2002, 453–454.
25. A. Efrat and S. Har-Peled, Locating Guards in Art Galleries, *2nd IFIP International Conference on Theoretical Computer Science* 2002, 181–192.
26. A. Efrat, S. Kobourov and A. Lubiw, Computing Homotopic Shortest Paths Efficiently, *European Symposium on Algorithms (ESA)* 2002, 411–423.
27. H. Alt , A. Efrat, G. Rote and C. Wenk, matching planar maps, *Proc. 14th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)* 2003, 589–592.
28. A. Efrat, H. H. González-Banos, S. Kobourov and L. Palaniappan, optimal motion strategies to track and capture a predictable target, *IEEE International Conference on Robotics and Automation*, 2003.
29. M. Dror, A. Efrat, A. Lubiw and J. S. B. Mitchell, touring a sequence of polygons, *ACM Symposium on Theory of Computing (STOC)* 2003, 473–482.
30. P. Brass, E. Cenek, C. A. Duncan, A. Efrat, C. Erten, D. Ismailescu, S. G. Kobourov, A. Lubiw and J. S. B. Mitchell, on simultaneous, planar graph embedding, *Workshop on Data Structures (WADS)* 2003, 243–255.

31. A. Efrat, C. Erten and S. Kobourov, fixed-location circular-arc drawing of planar graphs, *Graph Drawing (GD) 2003* 147–158.
32. O. Cheong, A. Efrat and S. Har-Peled, on finding a guard that sees most and a shop that sells most, *Proc. 15th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2004, 1098–1107.
33. A. Amir, A. Efrat, J. Myllymaki, L. Palaniappan and K. Wampler, buddy tracking — efficient proximity detection among mobile friends *The 23rd Conference of the IEEE Communications Society (INFOCOM)* 2004.
34. J. Arango, M. Degermark, A. Efrat and S. Pink, an efficient flooding algorithm for mobile Ad-hoc networks, *Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt)*, 2004.
35. B. Aronov, A. Efrat, V. Koltun and M. Sharir, on the union of κ -round objects in three and four dimensions, *Proc. 20th Annual Symposium on Computational Geometry (SoCG)* (2004), 383–390.
36. Q. Fan, A. Efrat, V. Koltun, S. Krishnan and S. Venkatasubramanian, hardware-assisted natural neighbor interpolation, *Workshop on Algorithm Engineering and Experiments (ALENEX)* 2005. **Acceptance ratio:15/61.**
37. A. Efrat, S. Har-Peled and J. Mitchell, approximation algorithms for two optimal location problems in sensor networks, *IEEE 2nd Int. conf. on Broadband Communication, Networks and systems. (BROADNET)* 2005.
38. A. Iyer, A. Efrat, C. Erten, D. Forrester and S. Kobourov, force-directed approaches to sensor localization, *Workshop on Algorithm Engineering and Experiments (ALENEX)* 2006.
39. E. Ezra, M. Sharir and A. Efrat, On the ICP Algorithm, *Proc. 22th Annual Symposium on Computational Geometry (SoCG)*, 2006.
40. J. Arango, A. Efrat, S. Ramasubramanian and M. Krunz, retransmission and back-off strategies for broadcasting in multi-hop wireless networks, *IEEE 3rd Int. conf. on Broadband Communication, Networks and systems. (BROADNET)* 2006. (**Acceptance ratio:%40**)
41. Y. Shi, Y. T. Hou, and A. Efrat, algorithm Design for Base Station Placement Problems in Sensor Networks, *3rd Int. Conf. on Quality of Service in Heterogeneous Wired/Wireless Networks* 2006, to appear.
42. Jesus Arango, A. Efrat, M. Krunz and S. Ramasubramanian, onroad vehicular broadcast, *15th International Conference on Computer Communications and Networks (ICCCN)* 2006.
43. A. Efrat, R. Balasubramanian and S. Ramasubramanian, coverage time optimization in sensor networks, *Third IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS'06)* 2006.
44. Q. Fan, A. Amir, K. Barnard, A. Efrat, and L. Ming, Matching Slides To Presentation Videos, *ACM SIGMM International Workshop on Multimedia Information Retrieval*
 item Q Fan, A. Amir, K. Barnard, R. Swaminathan, A. Efrat, temporal modeling of slide change in presentation videos *32nd IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)* 2007, to appear.

C. Papers in Non-Competitive Venues.

1. R. Bar-Yehuda, A. Efrat and A. Itai, A simple algorithm for maintaining the center of a planar point-set, *Proc. 5th Canad. Conf. Comput. Geom. (CCCG)*, 1993, 252–257.
2. A. Efrat, M. Lindenbaum and M. Sharir, finding maximally consistent sets of halfspaces, *Proc. 5th Canad. Conf. Comput. Geom. (CCCG)*, 1993, 432–436.
3. A. Efrat, M. Sharir and G. Rote, on the union of fat wedges and separating a collection of segments by a line, *Proc. 5th Canad. Conf. Comput. Geom. (CCCG)*, 1993, 115–120.
4. A. Efrat, S. G. Kobourov, M. Stepp, and C. Wenk, Growing Fat Graphs, video contribution, *Proc. 18th Annual Symposium on Computational Geometry (SoCG)*, 277–278, 2002.
5. C. Wenk, H. Alt, A. Efrat, L. Palaniappan and Gnter Rote, Finding a curve in a map, video contribution, *Proc. 19th Annual Symposium on Computational Geometry (SoCG)* 384–385, 2003.
6. K. Barnard, A. Connolly, L. Denneau, A. Efrat, J. N. Heasley, R. Jedicke, J. M. Kubica, B. Moon, A. Moore, S. Morris, P. Rao, The LSST moving object pipeline, *Observatory operations: strategies, processes, and systems, proceedings of SPIE* Vol. #6270, 2006 (to appear).
7. J. Kubica, T. Axelrod, K. Barnard, A. Connolly, L. Denneau, A. Efrat, J. Heasley, R. Jedicke, B. Moon, A. Moore, S. Morris, P. Rao, "Efficiently Tracking Moving Sources in the LSST", *The 207th meeting of the American Astronomical Association*.

Invited Presentations

- Computer Science Department, FU Berlin (1999). Subject of talk: Bottleneck Pattern Matching
- American Mathematical Society Meeting at South Carolina (2000). Subject of talk: Morphing between curves.
- Dagstuhl workshop on Computational Geometry (2001).
- Invited talk at Honda Research labs (2002). Subject of the talk: Art Gallery Problems.
- Dagstuhl workshop on Computational Geometry (2003). Subject of talk: Touring a Sequence of Polygons.
- Invited talk at Tel-Aviv University (2004). Subject of talk: Touring a Sequence of Polygons.
- Invited talk at Ben-Gurion University (2004). Subject of talk: Touring a Sequence of Polygons.
- Invited talk at Texas A&M university (2004). Subject of talk: Touring a Sequence of Polygons.
- Invited talk in ECE department at the University of Arizona (2004). Subject of talk: Touring a Sequence of Polygons.
- Invited visit and talk in Caltech (2005). Subject of talk: Sensors locations problems.
- Invited visit and talk in ASU (2005). Subject of talk: Sensors locations problems.
- Dagstuhl workshop on Computational Geometry (2005) Subject of talk: On Sensor Location Problems.
- Invited visit and talk in Universitat Politecnica de Catalunya, Barcelona. (2006) Subject of talk: On Sensor Location Problems.
- Invited visit and talk in Stony Brook. (2006) Subject of talk: On Sensor Location Problems.
- Santa Barbara NSF Workshop on Geometric Approaches to Ad Hoc and Sensor Networks (2006) Subject of talk: On sensor scheduling problems.
- Dagstuhl workshop on Robot Motion Planning (2006). Subject: TBA.
- Dagstuhl workshop on Computational Geometry (2007). Subject: TBA.

Teaching Experience

- Taught a seminar on Optimization problems in sensors and ad-hoc networks. The University of Arizona.
- Taught a course on C and Unix, The University of Arizona.
- Taught a course on Geometric Algorithms, The University of Arizona.
- Taught a seminar on Geometric Matching and Applications to Biology, The University of Arizona.
- Taught a course on Computer Graphics, and a courses on Advance Computer Graphics, The University of Arizona.
- Taught a course on Foundations of Computing, and a courses on Algorithms, (introduction and advance levels), The University of Arizona.
- Collaborate in instructing research seminars on Computational Geometry, Stanford University.
- Instructor in courses on Data Structures and Algorithms, and on Graph Algorithms, in Tel-Aviv University. I also taught these courses at the Technion, at the College for Management in Herzelia, at th College of Tel-Aviv, and at IBM Israel. Due to the internet boom at this period, (1996–1998) all these places offered a certificate program degree in software engineering.
- Taught a course on Graph Algorithms, in the Academic College of Tel-Aviv, and at the Technion.
- Teaching assistant in an advanced course in Data Structures, The Technion.
- Taught courses of different levels in C and Unix Programming, Tel-Aviv University.
- Instructor at a course in Discrete Mathematics, Tel-Aviv University.
- Instructor at a seminar in Randomized Algorithms in Computational Geometry, Tel-Aviv University).
- Taught a seminar on Geographic Information Systems and Computational Geometry, Tel-Aviv University.
- Was a member of a team at the Open University (Israel) that prepared courses for distance learning. These courses include Advanced Algorithms, File Systems and Computational Geometry.