Mihai Pătraşcu

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Born: July 17, 1982

EDUCATION

2007–2008 Massachusetts Institute of Technology — Doctor of Philosophy
Thesis: "*Lower Bound Techniques for Data Structures*" — Adviser: Erik Demaine

2006–2007 Massachusetts Institute of Technology — Master of Science
Thesis: "*Computational Geometry through the Information Lens*" — Adviser: Erik Demaine

2002–2006 Massachusetts Institute of Technology — Bachelor of Science
Mathematics with Computer Science. GPA: 5.0/5.0.

2001–2002 University of Craiova, Romania — (freshman)
Computer Engineering. GPA: 10/10.

1997–2001 C.N. Carol I, Craiova, Romania — (high school)
Mathematics with Physics. GPA: 9.6/10; Baccalaureate: 9.55/10.

POSITIONS

07/2009 – present   *AT&T Labs* (Algorithms and Optimization Dept.)
Senior Member of Technical Staff—Research.

09/2008 – 06/2009   *IBM Almaden* (Comp. Sci. Principles and Methodologies)
Raviv Postdoctoral Fellow.

09/2007 – 09/2008   *MADALGO* (Center for Massive Data Algorithmics, Denmark)
Supported student.

06/2007 – 08/2007   *IBM Almaden* (Comp. Sci. Principles and Methodologies)
Research intern. Mentor: T.S. Jayram.

06/2006 – 08/2006   *AT&T Labs* (Algorithms and Optimization Dept.)
Research intern. Mentor: Mikkel Thorup.

02/2003 – 05/2006   *MIT CSAIL* (Theory Group)
Undergraduate researcher. Adviser: Erik Demaine.

09/2002 – 12/2002   *MIT LCS* (Program Compilation and Verification Group)
Undergraduate researcher. Advisers: Viktor Kuncak and Martin Rinard.

09/2001 – 03/2002   *Softwin, Romania*
Research engineer (biometrics).

07/2001 – 08/2001   *SyncRo Soft, Romania*
Research intern (voice recognition).

05/1999 – 06/1999   *Idaco Systems, Romania*
Intern (real-time control).

Committees

- Scientific Committee (*Chair*), 19$^{\text{th}}$ Balkan Olympiad in Informatics   *BOI'11*
- International Scientific Committee (elected member)   *IOI* 2010–2013
- Program Committee, 3$^{\text{rd}}$ Workshop on Massive Data Algorithmics   *MASSIVE'11*
- Host Scientific Committee, 22$^{\text{nd}}$ International Olympiad in Informatics (Canada)   *IOI'10*
- Program Committee, 22$^{\text{nd}}$ ACM–SIAM Symposium on Discrete Algorithms   *SODA'11*
- Program Committee, 2$^{\text{nd}}$ Workshop on Massive Data Algorithmics   *MASSIVE'10*
- Program Committee (*co-chair*), 11$^{\text{th}}$ Intl. Symposium on Symbolic and Numeric Algorithms for Scientific Computing / Advances in the Theory of Computing Track   *SYNASC'09*
- Host Scientific Committee, 21$^{\text{st}}$ International Olympiad in Informatics (Bulgaria)   *IOI'09*
- Scientific Committee (*Chair*), 16$^{\text{th}}$ Central European Olympiad in Informatics   *CEOI'09*
- Program Committee, 50$^{\text{th}}$ IEEE Symposium on Foundations of Computer Science   *FOCS'09*
- Program Committee, 11$^{\text{th}}$ Scandinavian Workshop on Algorithm Theory   *SWAT'08*
- Scientific Committee, 11$^{\text{th}}$ Balkan Olympiad in Informatics   *BOI'03*
- Scientific Committee, Romanian National Olympiad in Informatics (2002–2004, 2008).

Awards and Distinctions

- Presburger Award   EATCS, 2012
- MIT Sprowls Award (for best doctoral theses in Comp. Sci.)   MIT, 2009
- IBM Josef Raviv Memorial Postdoctoral Fellowship   IBM Research, 2008
- Machtey Award (Best Student Paper in FOCS)   49$^{\text{th}}$ FOCS, 2008
- MIT Presidential Fellow. Akamai Fellowship (for top new PhD students)   MIT, 2006
- Phi Beta Kappa Honorary Society (for top undergraduates)   2006
- *Outstanding Undergraduate Award* from the Computing Research Association (CRA)   2005
  Award for best undergraduate research in the US and Canada, received as sophomore.
- Best Student Paper in the 32$^{\text{nd}}$ ICALP, Track A   ICALP 2005
- University Exceptional Fellowship (first time awarded to a freshman)   U. Craiova, 2002
- President of Romania's *Medal of Excellence*   2000—2001
- Romanian National Olympiad in Informatics: first prize per age group   1993—2001
- 13$^{\text{th}}$ International Olympiad in Informatics (Tampere, Finland)   gold medal, IOI 2001
- 12$^{\text{th}}$ International Olympiad in Informatics (Beijing, China)   gold medal, IOI 2000
- 7$^{\text{th}}$ Central European Olympiad in Informatics (Cluj, Romania)   silver medal, CEOI 2000
- 8$^{\text{th}}$ Balkan Olympiad in Informatics (Ohrid, Macedonia)   silver medal, BOI 2000
- 11$^{\text{th}}$ International Olympiad in Informatics (Antalya, Turkey)   silver medal, IOI 1999
- 6$^{\text{th}}$ Central European Olympiad in Informatics (Brno, Czech Rep.)   gold medal, CEOI 1999
- Tuymaada Olympiad (Yakutsk, Russia), informatics section   first prize, 1998
- Applied Math Competition (Chişinău, Moldova): 1$^{\text{st}}$ place/individual, 1$^{\text{st}}$ place/team   1996
- Romanian National Olympiad in Physics, first (1996) and second (1997) prizes
- various prizes, regional Romanian competitions in Computer Science and Physics

Teaching

Aug'10 U. Aarhus and MADALGO   *Geometric Data Structures*
   Summer school (4-days), cotaught with T. Chan, S. Har-Peled, J. Iacono. 47 students.

Spring'09 U.C. Berkeley   *CS172 Computability and Complexity*
   Upper-division course. 31 students.

Nov–Dec'08 U.C. Berkeley   *Berkeley Algorithmists' Meeting*
   Weekly research seminar.

Jun–Jul'08 U. Bucharest. Weekly research seminar.

Jan'07 U. Bucharest   *Geometric Perspectives in Algorithm Design*
   Two-day open course. Attended by 55 faculty, students, and engineers.

Aug'06 DIKU (U. Copenhagen)   *Lower Bound Techniques for Data Structures*
   Two-day summer school, cotaught with Mikkel Thorup.

Spring'05 MIT, graduate course   *6.897 Advanced Data Structures*

   Co-designed the course together with Erik Demaine (now in regular MIT curriculum as 6.851).
   The I served as Teaching Assistant and with a student rating of 6.0/7.0.

June'03 Course at the Romanian Olympiad-Team Camp.   *Advanced Data Structures*

Grants

2007–2008 Google Research Awards, *Data Structures*, Erik Demaine (PI), Mihai Pătraşcu (research personnel).

Keynote Talks

Nov'11 New York Theory Day / *Hashing for Linear Probing*

Jul'11 U. Aarhus-Tsinghua Workshop on "Synergies in Lower Bounds" /
   Lower Bounds for Data Structures: An Overview

Aug'11 11th Algorithms and Data Structures Symposium (*WADS*) / *Theory and Practice of Linear Probing*

Oct'10 51st IEEE Symposium on Foundations of Computer Science (*FOCS*) / *How to Grow Your Lower Bounds*

Aug'10 Barriers in Computational Complexity (Princeton) / *Lower Bounds for Data Structures*

Journal Publications

A "special issue" of a journal contains the top papers from a specific conference, selected and invited by the Program Committee of the conference.

1. Timothy M. Chan, Mihai Pătraşcu, and Liam Roditty: **Dynamic Connectivity: Connecting to Networks and Geometry**. Special issue of *SIAM Journal on Computing* 40(2), pp. 333–349 (2011). Also Proc. 49th IEEE Symposium on Foundations of Computer Science (*FOCS'08*), 95-104.

2. Mihai Pătraşcu: **Unifying the Landscape of Cell-Probe Lower Bounds**
   SIAM Journal on Computing 40(3), pp. 827-847 Special issue for FOCS'06.
   Appeared under the title "(Data) Structures" in Proc. 49th IEEE Symposium on Foundations of Computer Science (*FOCS'08*), 434-443.

3. Timothy Chan and Mihai Pătraşcu: **Transdichotomous Results in Computational Geometry, I: Point Location in Sublogarithmic Time**
   SIAM Journal on Computing 39(2), pp. 703–729 (2010). Special issue for FOCS'06.
   Based on two conference publications by each author, appearing simultaneously.
   - Mihai Pătraşcu: **Planar Point Location in Sublogarithmic Time**
     Proc. 47th IEEE Symposium on Foundations of Computer Science (*FOCS'06*), 325–332.

4. Mihai Pătraşcu and Mikkel Thorup: **Higher Lower Bounds for Near-Neighbor and Further Rich Problems**. *SIAM Journal on Computing* 39(2), pp. 730–741 (2010). Special issue for FOCS'06.
   Also in Proc. 47th IEEE Symposium on Foundations of Computer Science (*FOCS'06*), 646–654.

5. Jakub Pawlewicz and Mihai Pătraşcu: **Order Statistics in the Farey Sequences in Sublinear Time**. *Algorithmica* 55(2): pp. 271-282 (2009).
   Merges a paper by Pawlewicz (ESA'07) with my subsequent improvement `arXiv:0706.4107`.

6. Ilya Baran, Erik Demaine and Mihai Pătraşcu: **Subquadratic Algorithms for 3SUM**
   Algorithmica, 50(4), pp. 584–596 (2008). Special issue for WADS'05.
   Also in Proc. 9th Algorithms and Data Structures Symposium (*WADS'05*), pp. 409–421.

7. M. Pătraşcu and Corina Tarniţă: **On Dynamic Bit-Probe Complexity**
   Theoretical Computer Science 380, pp. 127–142 (2007). Special issue for ICALP'05.
   Also in Proc. 32nd International Colloquium on Automata, Languages and Programming (*ICALP'05*), pp. 969–981. Received the ICALP *Best Student Paper* Award.

8. Erik Demaine, Dion Harmon, John Iacono, and M. Pătraşcu: **Dynamic Optimality—Almost**
   SIAM Journal on Computing, 37(1), pp. 240–251 (2007). Special issue for FOCS'04.
   Also in Proc. 45th IEEE Symposium on Foundations of Computer Science (*FOCS'04*), 484–490.

9. Mihai Pătraşcu and Erik Demaine: **Logarithmic Lower Bounds in the Cell-Probe Model**
   SIAM Journal on Computing 35(4), pp. 932–963 (2006). Special issue for STOC'04.
   Merges two conference publications:
   - **Lower Bounds for Dynamic Connectivity**
     Proc. 36th ACM Symposium on Theory of Computing (*STOC'04*), pp. 546–553.
   - **Tight Bounds for the Partial-Sums Problem**
     Proc. 15th ACM–SIAM Symposium on Discrete Algorithms (*SODA'04*), pp. 20–29.
     Invited to the special issue of *ACM Transactions on Algorithms*; declined.

Conference Publications

Papers already published in journals are only listed above.

10. Erik D. Demaine, Martin L Demaine, Yair N Minsky, Joseph S. B. Mitchell, onald L. Rivest and Mihai Pătraşcu: **Picture-Hanging Puzzles**.

    Proc. 6th International conference on Fun with Algorithms *FUN'12*)., toappear.
    Full version:{`arxiv.org:1203.3602`}

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11. John Iacono and Mihai Pătraşcu: **Using Hashing to Solve the Dictionary Problem (In External Memory)**. Proc. 23rd ACM–SIAM Symposium on Discrete Algorithms (*SODA'12*), to appear.

12. Timothy M. Chan, Kasper Larsen and Mihai Pătraşcu: **Orthogonal Range Searching on the RAM, Revisited**. Proc. 27th ACM Symposium on Computational Geometry (*SoCG'11*), 1-10.

13. Mihai Pătraşcu and Mikkel Thorup: **The Power of Simple Tabulation Hashing**. Proc. 43rd ACM Symposium on Theory of Computing (*STOC'11*), pp. 1–10.

14. Mihai Pătraşcu and Mikkel Thorup: **Don't Rush into a Union: Take Time to Find Your Roots**. Proc. 43rd ACM Symposium on Theory of Computing (*STOC'11*), pp. 559–568. Invited to the special issue of SIAM Journal on Computing (*SICOMP*); in submission.

15. Mihai Pătraşcu and Liam Roditty: **Distance Oracles Beyond the Thorup–Zwick Bound** Proc. 51st IEEE Symposium on Foundations of Computer Science (*FOCS'10*), 815-823.

16. Mihai Pătraşcu and Mikkel Thorup: **On the k-Independence Required by Linear Probing and Minwise Independence**. Proc. 37th International Colloquium on Automata, Languages and Programming (*ICALP'10*), pages 715-726.

17. Mihai Pătraşcu: **Towards Polynomial Lower Bounds for Dynamic Problems** Proc. 42nd ACM Symposium on Theory of Computing (*STOC'10*), pages 603-610.

18. Yevgeniy Dodis, M. Pătraşcu, and Mikkel Thorup: **Changing Base without Losing Space** Proc. 42nd ACM Symposium on Theory of Computing (*STOC'10*), pages 593-602.

19. Mihai Pătraşcu and Emanuele Viola: **Cell-Probe Lower Bounds for Succinct Partial Sums** Proc. 21st ACM–SIAM Symposium on Discrete Algorithms (*SODA'10*), pages 117-122.

20. Mihai Pătraşcu and Ryan Williams: **On the Possibility of Faster SAT Algorithms** Proc. 21st ACM–SIAM Symposium on Discrete Algorithms (*SODA'10*), pages 1065-1075.

21. Timothy Chan and Mihai Pătraşcu:
    Counting Inversions, Offline Orthogonal Range Counting, and Related Problems Proc. 21st ACM–SIAM Symposium on Discrete Algorithms (*SODA'10*), pages 161-173.

22. Alexandr Andoni, T. S. Jayram, and Mihai Pătraşcu:
    Lower Bounds for Edit Distance and Product Metrics via Poincaré-Type Inequalities Proc. 21st ACM–SIAM Symposium on Discrete Algorithms (*SODA'10*), pages 184-192.

23. Erik Demaine, Dion Harmon, John Iacono, Daniel Kane, and Mihai Pătraşcu:
    The Geometry of Binary Search Trees Proc. 20th ACM–SIAM Symposium on Discrete Algorithms (*SODA'09*), pages 496-505.

24. Mihai Pătraşcu: **Succincter**. Proc. 49th IEEE Symposium on Foundations of Computer Science (*FOCS'08*), pages 305-313. Received the Machtey Award for *Best Student Paper*.

25. Alexandr Andoni, Dorian Croitoru, and Mihai Pătraşcu:
    Hardness of Nearest-Neighbor Search under ℓ_∞ Proc. 49th IEEE Symposium on Foundations of Computer Science (*FOCS'08*), pages 424-433.

26. Amit Chakrabarti, T. S. Jayram, and Mihai Pătraşcu:
    Tight Lower Bounds for Selection in Randomly Ordered Streams Proc. 19th ACM/SIAM Symposium on Discrete Algorithms (*SODA'08*), pp. 720–729. Invited to the special issue of *ACM Transactions on Algorithms*.

27. Mihai Pătraşcu and Mikkel Thorup: **Planning for Fast Connectivity Updates**
Proc. 48th IEEE Symposium on Foundations of Computer Science (*FOCS'07*), pp. 263–271.

28. Gianni Franceschini, S. Muthukrishnan, and M. Pătraşcu: **Radix Sorting With No Extra Space**
Proc. 15th European Symposium on Algorithms (*ESA'07*), 194–205. Full version `arXiv:0706.4107`.

29. Mihai Pătraşcu: **Lower Bounds for 2-Dimensional Range Counting**
Proc. 39th ACM Symposium on Theory of Computing (*STOC'07*), pp. 40–46.

30. Timothy Chan and Mihai Pătraşcu: **Voronoi Diagrams in $n \cdot 2^{O(\sqrt{\lg \lg n})}$ Time**
Proc. 39th ACM Symposium on Theory of Computing (*STOC'07*), pp. 31–39.

31. Erik Demaine and M. Pătraşcu: **Tight Bounds for Dynamic Convex Hull Queries (Again)**
Proc. 23rd ACM Symposium on Computational Geometry (*SoCG'07*), pp. 354–363.

32. Nicholas Harvey, Mihai Pătraşcu, Yonggang Wen, Sergey Yekhanin, and Vincent Chan:
Non-Adaptive Fault Diagnosis for All-Optical Networks via Combinatorial Group Testing on Graphs
Proc. 26th IEEE Conference on Computer Communications (*INFOCOM'07*), pp. 697–705.

33. M. Pătraşcu and Mikkel Thorup: **Randomization Does Not Help Searching Predecessors**
Proc. 18th ACM–SIAM Symposium on Discrete Algorithms (*SODA'07*), pp. 555–564.

34. Alexandr Andoni, Piotr Indyk, and Mihai Pătraşcu:
On the Optimality of the Dimensionality Reduction Method
Proc. 47th IEEE Symposium on Foundations of Computer Science (*FOCS'06*), pp. 449–458.

35. Mette Berger, Esben Rune Hansen, Rasmus Pagh, M. Pătraşcu, Milan Ružić, and Peter Tiedemann:
Deterministic Load Balancing and Dictionaries in the Parallel Disk Model
Proc. 18th ACM Symposium on Parallelism in Algorithms and Architectures (*SPAA'06*), 299–307.

36. Mihai Pătraşcu and Mikkel Thorup: **Time-Space Trade-Offs for Predecessor Search**
Proc. 38th ACM Symposium on Theory of Computing (*STOC'06*), pp. 232–240.

37. Erik Demaine, Friedhelm Meyer auf der Heide, Rasmus Pagh, and Mihai Pătraşcu: **De Dictionariis Dynamicis Pauco Spatio Utentibus** (On Dynamic Dictionaries Using Little Space)
Proc. 7th Latin American Theoretical Informatics (*LATIN'06*), pp. 349–361.
Full version available as `arXiv:cs.DS/0512081`.

38. Micah Adler, Erik Demaine, Nicholas Harvey, and Mihai Pătraşcu: **Lower Bounds for Asymmetric Communication Channels and Distributed Source Coding**
Proc. 17th ACM–SIAM Symposium on Discrete Algorithms (*SODA'06*), pp. 251–260.

39. Christian Worm Mortensen, Rasmus Pagh, and Mihai Pătraşcu:
On Dynamic Range Reporting in One Dimension
Proc. 37th ACM Symposium on Theory of Computing (*STOC'05*), pp. 104–111.
Full version available as `arXiv:cs.DS/0502032`.

40. Corina Tarniţă and Mihai Pătraşcu: **Computing Order Statistics in the Farey Sequence**
Proc. 6th Algorithmic Number Theory Symposium (*ANTS'04*), pp. 358–366.

41. Stelian Ciurea, Erik Demaine, Corina Tarniţă, and Mihai Pătraşcu:
Finding a Divisible Pair and a Good Wooden Fence
Proc. 3rd International Conference on Fun with Algorithms (*FUN'04*), pp. 206–219.
A poster on the divisible pair problem was displayed at the 6th Algorithmic Number Theory Symposium (ANTS'04). An invited extended abstract of the divisible-pair material appeared in the *ACM SIGSAM Bulletin* 38(3), pp. 98–100 (2004).

42. Erik Demaine, Thouis Jones, and Mihai Pătrașcu:
    Interpolation Search for Non-Independent Data
    Proc. 15th ACM–SIAM Symposium on Discrete Algorithms (*SODA'04*), pp. 522–523.

Other Publications

43. Mihai Pătrașcu: **Searching the Integers**
    Invited survey in *Encyclopedia of Algorithms* (Springer Reference Works).
44. Mihai Pătrașcu: **Lower Bounds for Dynamic Connectivity**
    Invited survey in *Encyclopedia of Algorithms* (Springer Reference Works).
45. Mihai Pătrașcu: **On Two Problems from the National Olympiad in Informatics 2002,
    New Solutions and Generalizations** (in Romanian)
    Gazeta Informatică, February 2003, pp. 13–14.
46. Mihai Pătrașcu and Mikkel Thorup: **Twisted Tabulation Hashing**. Submitted to STOC
    2012.
47. Mihai Pătrașcu, Liam Roditty, and Mikkel Thorup: **A New Infinity of Distance Oracles
    for Sparse Graphs**. Submitted to STOC 2012.

Talks / Research Visits

Excluding conference talks. Format: "institution [/ host] / title."

Dec'11 MSRI (Mathematical Sciences Research Institute) / Quantitative geometry in Computer
Science / *A New Infinity of Distance Oracles for Sparse Graphs*

Apr'11 Rutgers / James Abello / *Using Hashing to Solve the Dictionary Problem (In External
Memory)*

Feb'11 AT&T Labs / *Using Hashing to Solve the Dictionary Problem (In External Memory)*

Oct'10 Princeton / Madhur Tulsiani / *The Power of Simple Tabulation Hashing*

Oct'10 NYU / Assaf Naor / *How to Grow Your Lower Bounds: Static Data Structures*

Oct'10 AT&T Labs / *How to Grow Your Lower Bounds: Dynamic Data Structures*

May'10 5th Stringology Research Workshop (Bar Ilan) / *For hashing, treat your integers as strings*

May'10 Weizmann Inst. / Robert Krauthgamer / *Dynamic Lower Bounds*

Apr'10 Aarhus Univ., MADALGO / Gerth S. Brodal / *Take Time to Find Your Roots*

Apr'10 AT&T Labs / Henry Landau / *Tabulation-Based Hashing*

Mar'10 Rutgers / Troy Lee / *Applications of Communication Complexity in Data Structures*
Guest lecture in Communication Complexity (graduate course).

Feb'10 Dagstuhl meeting on *Data Structures* / *How to Grow Your Balls*

Dec'09 Dagstuhl on *Parameterized Complexity* / *Lower Bounds from the Complexity of SAT*

Dec'09 U. Bucharest / Gheorghe Ștefănescu / *Negative Results for Data Structures*

Dec'09 Bucharest Polytechnic / Mugurel Andreica / *Tabulation-Based Hashing*

Nov'09 DIMACS / Graham Cormode / *On the Possibility of Faster SAT Algorithms*

Oct'09 Princeton / Moses Charikar / *Towards Polynomial Lower Bounds for Dynamic Problems*

Oct'09 NYU / Subhash Khot / *Hardness of Nearest Neighbor under ℓ_∞*

Sep'09 Rutgers Univ. / Mario Szegedy / *Lower Bounds for Succinct Data Structures*

Aug'09 Princeton Intractability Center, meeting on "Barriers in Computational Complexity"

Jun'09 Bertinoro Workshop on Algorithms and Data Structures / *Counting Inversions Faster*

Jun'09 Princeton Intractability Center, meeting on "Status of Impagliazzo's Worlds"

May'09 Bar Ilan University / Liam Roditty / *Succincter*

May'09 Tel Aviv University / Uri Zwick / *The hardness of 3SUM and Given-Weight Triangle*

Feb'09 Information Theory and Applications Workshop, U.C. San Diego / *Locally decodable arithmetic codes, and succincter data structures*

Jan'09 Banff meeting on "Mathematics of String Spaces and Algorithmic Applications" / *Hardness of Nearest Neighbor under ℓ_∞*

Jan'09 Berkeley / Luca Trevisan / *Succincter*

Dec'08 SUNY Buffalo / Atri Rudra / *(Data) Structures*

Nov'08 IBM Almaden / *Succinter*

Apr'08 U.I. Urbana and Champaign / Sariel Har-Peled / *(Data) Structures*

Apr'08 Toyota Technological Inst., Chicago / Prahladh Harsha / *(Data) Structures*

Apr'08 Tufts Univ. / Lenore Cowen / *Succincter*

Spring 2008 U.C. San Diego, IBM Almaden, U. Chicago, AT&T Labs, U.T. Austin, GA.Tech, Google NY / *Limits of Data Structures*

Feb'08 Dagstuhl meeting on *Data Structures* / *Hard Data-Structure Problems*; *Onlinifying Ian*

Feb'08 Univ. de Vest, Timişoara / Gabriel Istrate / *Dynamic Graph Algorithms*

Nov'07 MIT / *A Perspective on Slepian-Wolf Coding*

Oct'07 U.L. Bruxelles / Stefan Langerman / *Farey Sequences & Counting Primitive Lattice Points*

Oct'07 U. Bonn / Yakov Nekrich / *Dynamic Graph Algorithms invade Geometry*

Sep'07 Tsinghua U. / China Theory Week / *Round Elimination: A Proof, A Concept, A Direction*

Jul'07 IBM Almaden / *Dynamic Optimality—Almost*

May'07 U. Washington / Paul Beame / *Lower Bounds for 2-Dimensional Range Counting*

May'07 Microsoft Research, Redmond / Asaf Shapira / *Planning for Fast Connectivity Updates*

Apr'07 MIT / Piotr Indyk / *Geometric Searching with Bounded Precision*
Guest lecture in 6.850 Geometric Computation (graduate course).

Apr'07 MIT / Erik Demaine / *Tight Lower Bounds for Predecessor Search*
Guest lecture in 6.851 Advanced Data Structures (graduate course).

Mar'07 Brown Univ. / Crystal Kahn / *"Dynamic Connectivity": Questions and Some Answers*

Feb'07 UPenn / Sanjeev Khanna / *On the Optimality of the Dimensionality Reduction Method*

Feb'07 MIT / Crypto & Complexity / *Information Complexity and High-dimensional Geometry*

Dec'06 Tel Aviv U. / Uri Zwick / *C.G. Through the Information Lens: Dynamic Convex Hull*

Dec'06 Weizmann Inst. / Liam Roditty / *C.G. Through the Information Lens: Voronoi Diagrams*

Dec'06 The Technion, Haifa / Yuval Ishai / *C.G. Through the Information Lens: Point Location*

Aug'06 Bell Labs / Lisa Zhang / *Planar Geometry on the Grid*

Aug'06 AT&T Labs / *Communication Complexity and Data-Structure Lower Bounds*

Jun'06 IBM Almaden / T.S. Jayram / *Data-Structure Lower Bounds*

Apr'06 Stanford / Theory Lunch / *Searching in an Integer Universe*

Apr'06 MIT / Algorithms & Complexity / *Hardness Results for Near-Neighbor Problems*

Mar'06 U. Washington / Paul Beame / *Cell-Probe Complexity and Predecessor Search*

Oct'05 MIT / ToC Student Seminar / *Cell-Probe versus Communication Complexity*

Jun'05 Max Planck Institut für Informatik, Saarbrücken / Seth Pettie / *The Saga of Dynamic Lower Bounds around the Logarithmic Barrier*

Jun'05 Oberwolfach meeting on *Complexity Theory*

Sep'04 IT U. Copenhagen / Rasmus Pagh / *Logarithmic Lower Bounds in the Cell-Probe Model*

Scientific Service

Journal referee: Journal of the ACM (*JACM*), SIAM Journal on Computing (*SICOMP*), ACM Transactions on Algorithms (*TALG*), SIAM Journal on Discrete Mathematics (*SIDMA*), Algorithmica, Information & Computation, Information Processing Letters (*IPL*), Computers & Graphics

Conference referee: ACM Symposium on Theory of Computing (*STOC*), IEEE Symposium on Foundations of Computer Science (*FOCS*), ACM/SIAM Symposium on Discrete Algorithms (*SODA*), ACM Symposium on Computational Geometry (*SoCG*), Workshop on Algorithms and Data Structures (*WADS*), European Symposium on Algorithms (*ESA*), Symposium on Theoretical Aspects of Computer Science (*STACS*), Foundations of Software Technology and Theoretical Computer Science (*FSTTCS*), IEEE Globecom