

CURRICULUM VITAE

ANDREW V. GOLDBERG

Contact Information

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Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA.

Doctor of Philosophy degree in **Computer Science**, January 1987.

UNIVERSITY OF CALIFORNIA AT BERKELEY, Berkeley, CA.

Master of Science degree in **Computer Science**, August 1983.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA.

Bachelor of Science degree in **Mathematics**, May 1982.

Experience

AMAZON.COM, INC, E. Palo Alto, CA.

2014 to now.

Senior Principal Scientist.

Algorithms for transportation and logistics.

MICROSOFT RESEARCH, Mountain View, CA.

2002 to 2014

Principal Researcher.

Algorithm design, analysis, and experimental evaluation, algorithm engineering, mechanism design and computational game theory.

INTERTRUST TECHNOLOGIES CORP., Santa Clara, CA.

1998 to 2001.

Research Fellow.

Digital rights management, auctions and mechanism design, code obfuscation, algorithm engineering, algorithm design, analysis, and experimental evaluation.

NEC RESEARCH INSTITUTE, INC., Princeton, NJ.

1996 to 1998.

Senior Research Scientist.

1995 to 1996.

Research Scientist.

Algorithm design, analysis, and experimental evaluation; parallel and distributed computation; data compression.

STANFORD UNIVERSITY, Stanford, CA.

1987 to 1995.

**Assistant Professor of Computer Science;
Assistant Professor of Operations Research (by courtesy).**

Research and teaching in the areas of algorithm design and analysis, parallel and distributed computation, combinatorial optimization, graph theory, and computational complexity.

IBM ALMADEN RESEARCH LABORATORY, San Jose, CA.

1991 to 1992.

Visiting Scientist.

Algorithms for Linear Programming and related problems.

NEC RESEARCH INSTITUTE, Princeton, NJ.

1990 to 1995.

Consultant.

Design and analysis of algorithms, parallel computation.

AT&T BELL LABORATORIES, INC., Murray Hill, NJ.

1987 to 1994.

Consultant.

Design and analysis of algorithms.

PRINCETON UNIVERSITY, Princeton, NJ.

July 1987.

Research Associate.

Research in algorithms and optimization.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA.

January 1987 to June 1987.

Research Associate.

Research in algorithms and parallel computation.

THINKING MACHINES, INC., Cambridge, MA.

Summer 1986.

Summer Intern.

Implementation and performance analysis of parallel algorithms on the Connection Machine.

GTE LABORATORIES, INC., Waltham, MA.

1985 to 1986.

Consultant.

VLSI testing and programming methodology.

GTE LABORATORIES, INC., Waltham, MA.

1984 to 1985.

Member of Technical Staff.

Research and development in the areas of silicon compilation and VLSI testing.

SOFTWARE CONSULTING SERVICES, Allentown, PA.

Summer 1980; Summer 1981.

Programmer.

Design and implementation of software for office automation and network planning.

Publications

Over 150 papers. H-index 52 (Google Scholar). For the list of papers, see DBLP http://www.informatik.uni-trier.de/~ley/pers/hn/g/Goldberg:Andrew_V=.html

Software

Developed prototype software packages (some jointly with other researchers and students).

This software has been used in research and industrial environments. **Examples:**

CS2: an efficient algorithm for the minimum-cost flow problem,

SQ, HOTQ: efficient algorithms for the shortest path problem.

CYC: a collection of shortest path/negative cycle detection algorithms and problem generators.

HIPR: an efficient algorithm for the maximum flow problem,

SPLIB: a collection of shortest path algorithms and problem generators,

CSA: an efficient algorithm for the assignment problem,

GEM: – a generator of environments for metaprogramming.

Developed prototype software for road network routing and location-based services and participated in technology transfers.

Patents

Inventor or co-inventor on 16 patents.

Teaching and Advising

Taught at the Copenhagen Summer School on Shortest Paths (2005), the Aarhus Summer School on Computational Game Theory (2006), and Erice School on Graph Theory, Algorithms, and Applications (2008, 2011, 2014), Microsoft School on Data Structures and Algorithms (2010).

Taught a class on Path and Flow Algorithms at Yandex Data Analysis School (2011).

Taught courses in Computer Science and Operations Research at Stanford and Princeton.

Graduated six Ph.D. students.

Supervised many interns.

Mentored several researchers at MSR-SVC.

Honors

SIAM Fellow, class 2013.

Farkas Prize for Mid-career Researchers, *INFORMS Optimization Society*, 2011.

ACM Fellow, class 2010.

Gold Star Award, *Microsoft Research*, 2007.

Invited Speaker at the *The 27th Int. Conf. on Current Trends in Theory and Practice of Comp. Sci. (SOFSEM'07)*, Harrachov, Czech Republic, 2007.

Invited Speaker at the *The 12th Int. Symp. on Algorithms and Computation (ISAAC'01)*, Christchurch, New Zealand, 2001.

Invited Speaker at the *Third Workshop on Algorithm Engineering*, London, UK, 1999.

Invited Speaker at the *Scandinavian Workshop on Algorithm Theory*, Stockholm, Sweden, 1998.

Invited Speaker at the *Twenty-Second Conference on the Mathematics of Operations Research*, Lunteren, The Netherlands, 1997.

Invited Speaker at the *Second European Symposium on Algorithms*, The Netherlands, 1994.

Lanchester Honorable Mention of the *Operations Research Society of America*, 1993.

Young Investigator Award of the *Office of Naval Research*, 1991 to 1993.

Presidential Young Investigator Award of the *National Science Foundation*, 1988 to 1993.

A.W. Tucker Prize of the *Mathematical Programming Society*, 1988.

Software Engineering Achievement Award at *GTE Laboratories, Inc.*, 1985.

Fannie and John Hertz Foundation Fellow, 1983 to 1986.

F.M. Lankershim Scholarship at *U.C. Berkeley*, 1982 to 1983.

Editorial Activities

Referee for a variety of journals.

Member of Advisory Board, *ACM Journal of Experimental Algorithmics*.

Area Editor, *Mathematical Programming and Computation*.

Associate Editor, *Chicago Journal of Theoretical Computer Science*.

Professional Activities

Program committee member, *Workshop on Algorithm Engineering and Experimentation (ALENEX '15)*, 2015.

Program committee member, *15-th ACM-SIAM Symposium on Discrete Algorithms (SODA '16)*, 2015.

Co-organizer, *5th Bertinoro Workshop on Algorithms and Data Structures (ADS'13)*, Bertinoro, Italy, 2015.

Co-organizer, *Erice School on Graph Algorithms and Applications*, Erice, Italy, 2014.

Organizing committee chair, *School on Algorithms for Massive Data Sets (ALMADA)*, Moscow, Russia, 2013.

Co-organizer, *5th Bertinoro Workshop on Algorithms and Data Structures (ADS'13)*, Bertinoro, Italy, 2013.

Founding Faculty Fellow, Skolkovo Institute of Science and Technology, Moscow, Russia, 2012–2013.

Expert consul member, Dynasty Foundation, Moscow, Russia, 2011–now.

Advisory Board Member, Program for Computer Science, *Computer Science Center*, St. Petersburg, Russia.

Co-organizer, *Erice School on Graph Algorithms and Applications*, Erice, Italy, 2011.

Co-organizer, *5th Bertinoro Workshop on Algorithms and Data Structures (ADS'11)*, Bertinoro, Italy, 2011.

Organizing committee chair, *Data Structures and Algorithms School (MIDAS)*, St. Petersburg, Russia, 2010.

Program committee member, *18th European Symposium on Algorithms (ESA '10)*, Liverpool, UK, 2010.

Program committee member, *Computer Science Symposium in Russia (CSR'10)*, Kazan, Russia, 2010.

Program committee member, *9th International Symposium on Experimental Algorithms (SEA '10)*, Ischia Island, Italy, 2010.

Program committee member, *36th International Colloquium on Automata, Languages and Programming (ICALP'09)*, Rhodes, Greece, 2009.

Program committee co-chair, *Algorithmic Aspects of Information and Management (AAIM-09)*, San Francisco, USA, 2009.

Co-organizer, *4th Bertinoro Workshop on Algorithms and Data Structures (ADS'09)*, Bertinoro, Italy, 2009.

Program committee member, *The 19th International Symposium on Algorithms and Computation (ISAAC'08)*, Surfers Paradise, Australia, 2008.

Co-organizer, *Erice School on Graph Algorithms and Applications*, Erice, Italy, 2008.

Program committee member, *WEA 2008: 7th International Workshop on Experimental Algorithms*, Provincetown, 2008.

Program committee member, *LATIN 2008*, Busios, Brazil, 2008.

Program committee member, *Computer Science Symposium in Russia (CSR'08)*, Moscow, Russia, 2008.

Program committee member, *The fifth Workshop on Analytic Algorithmics and Combinatorics (ANALCO '08)*, San Francisco, 2008.

Program committee member, *The 3rd International Workshop On Internet And Network Economics (WINE 2007)*, San Diego, 2007.

Steering committee member, *European Symposium on Algorithms (ESA)*, 2003–2007.

Co-organizer, *3rd Bertinoro Workshop on Algorithms and Data Structures (ADS'07)*, Bertinoro, Italy, 2007.

Program committee member, *Computer Science Symposium in Russia (CSR'07)*, Ekaterinburg, Russia, 2007.

Co-organizer, *9th DIMACS Implementation Challenge: Shortest Paths*, 2005–2007.

Program committee member, *The 7th ACM Electronic Commerce Conference (EC'06)*, 2006.

Program committee member, *13th European Symposium on Algorithms (ESA '05)*, 2005.

Co-organizer, *2nd Bertinoro Workshop on Algorithms and Data Structures (ADS'05)*, Bertinoro, Italy, 2005.

Program committee member, *31st International Colloquium on Automata, Languages and Programming (ICALP '05)*, 2005.

Program committee member, *12th European Symposium on Algorithms (ESA '04)*, 2004.

Program committee member, *3-rd Workshop on Efficient and Experimental Algorithms*

(WEA '04), 2004.

Program committee member, *15-th ACM-SIAM Symposium on Discrete Algorithms (SODA '04)*, 2003.

Program committee member, *Workshop on Algorithms and Data Structures (WADS '03)*, 2003.

Program committee member, *International Workshop on Experimental and Efficient Algorithms (WEA '03)*, 2003.

Program committee member, *The 3rd ACM Electronic Commerce Conference (EC'01)*, 2001.

Program committee member, *IFIP International Conference on Theoretical Computer Science (TCS2000)*, 2000.

Program committee co-chair, *Workshop on Algorithm Engineering and Experimentation (ALENEX '00)*, 2000.

Steering committee member, *Workshop on Algorithm Engineering and Experimentation (ALENEX)*, 1999 – 2012.

Program committee member, *European Symposium on Algorithms (ESA '99)*, 1999.

Principal co-investigator, *Combinatorial Algorithm Test Sets (CATS) project*.

Program committee member, *Workshop on Algorithm Engineering (WAE '98)*, 1998.

Program committee member, *Ninth ACM-SIAM Symposium on Discrete Algorithms (SODA '98)*, 1997.

Session organizer, *1997 International Symposium on Mathematical Programming*, Lausanne, Switzerland.

Program committee member, *Workshop on Algorithm Engineering (WAE'97)*, Venice, Italy, 1997.

Advisory committee member, *DIMACS Workshop on Network Design: Connectivity and Facilities Location*, 1997.

Member, Theory of Computation Group, *the ACM Workshop on Strategic Directions in Computing Research*, 1996.

Program committee member, *Second Annual International Computing and Combinatorics Conference (COCOON '96)*.

Program committee member, *Sixth ACM-SIAM Symposium on Discrete Algorithms (SODA '95)*.

Program committee member, *Thirty-second IEEE Annual Symposium on Foundations of Computer Science (FOCS '92)*.

Research Support

National Science Foundation grant, 1994 to 1996.

Powel Foundation grants, 1991 and 1992.

Mitsubishi Electric Laboratories grant, 1991.

Stanford Office of Technology Licensing grant, 1991.

Young Investigator Award of the *Office of Naval Research*, 1991 to 1993.

Presidential Young Investigator Award of the *National Science Foundation*, 1988 to 1993.

3M Nontenure Faculty Award, 1989 and 1990.

IBM Faculty Development Award, 1988 and 1989.

DEC Equipment Grant, 1989.
AT&T Equipment Grant, 1989.

Languages

English (fluent), Russian (native), Spanish (intermediate).

Citizenship

US.

References

Prof. Robert E. Tarjan, Department of Computer Science, *Princeton University*,
ret@cs.princeton.edu.

Prof. David B. Shmoys, School of Operations Research and Information Engineering,
Cornell University, shmoys@orie.cornell.edu.

Prof. Giuseppe F. Italiano, Dipartimento di Informatica, Sistemi e Produzione, *Univer-*
sità di Roma "Tor Vergata", italiano@disp.uniroma2.it.