

Alan Skelley

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Citizenship: Canadian

Education

- **Ph.D. in Computer Science** (November 2005; conferred June 2006), University of Toronto, Canada. Supervised by Stephen A. Cook.
- **M.Sc. in Computer Science** (November 2000), University of Toronto, Canada. Supervised by Stephen A. Cook.
- **B.Sc. Honours in Computing Science** with first class honors and departmental gold medal, University of Alberta, Canada, June 1998.
- Languages: Fluent in English and French, conversational in modern Greek, some ability in Italian.

Industrial Work Experience

- **Software Engineer**, Google, Inc., August 2007-Present. Work broadly involves theoretical and practical aspects of machine learning, probability, statistics and systems, as applied to ads quality.
- **Software Developer**, IBM Canada Toronto Laboratory, May-August 1998. Primary developer on a project to produce an automated tool to select optimal or near-optimal indexes for a relational database, given a workload of queries and constraints. The resulting Index Advisor became a significant part of the performance optimization facilities of DB2.
- **Junior Programmer**, The ESYS Corporation, May-August 1997. Developed IMAP and IMSP servers on 10 UNIX platforms.
- **Junior Programmer**, Integrated Systems Applications (ISA) Corp., May-August 1995, May-August 1996. In-house system administration and network setup, troubleshooting and software testing for various clients.

Academic Work Experience

- Dipartimento di Informatica, Università degli Studi di Roma “La Sapienza”: Post-doctoral researcher, November 2006 – Present. Host: Nicola Galesi.
- Mathematical Institute, Academy of Sciences of the Czech Republic: Visiting Scholar, September 2005 – October 2006. Host: Jan Krajíček.

Technical Skills

- Very strong command of C/C++, UNIX (shells and utilities, system/network programming and administration, some Linux kernel development, etc.), python
- Literate in Perl, SQL, Matlab, lisp, java, html, javascript, LaTeX, prolog, pascal, etc.
- Fluency in many flavours of UNIX, Windows and MacOS
- Experience with many modern machine learning algorithms and systems of varying scales
- In-depth knowledge of modern datacenter and high-performance computing and networking systems, including mapreduce/hadoop and large-scale distributed storage systems
- Strong background in algorithms, data structures, cryptography, AI, databases, compilers
- Strong mathematical background including algebra, statistics and probability, combinatorics, discrete mathematics, logic, analysis

ACM Programming Contest Experience

- Member of winning team, 1997 ACM Mountain Region Scholastic Programming Contest and 8th place team, 1998 World Finals
- Coach, 2001-2002, 2002-2003 and Assistant Coach, 1998-1999, 1999-2000 and 2000-2001 University of Toronto ACM Programming Contest teams; world finalists all 5 years

Research and Professional Service

Research interests include computational complexity, bounded arithmetic, propositional proof complexity, algorithms. Referee for *The Mathematical Intelligencer*, *The Journal of Combinatorial Optimization*, *Fundamenta Informaticae*, *CiE*, *Mathematical Logic Quarterly*, *The Journal of Symbolic Logic*

A complete list of publications, talks and presentations is available on my web page.

Teaching Experience

- **Instructor:** York University, Department of Computer Science and Engineering, January-April 2004. Taught COSC4111, a 4th-year computability and logic course.
- **Teaching Assistant:** University of Toronto, Department of Computer Science, September 1998-April 2005. TA for 18 terms, including courses on UNIX, compilers, data structures, discrete mathematics, theoretical computer science and logic.
- **Teaching Assistant:** University of Alberta, Department of Computing Science, September 1995-April 1998. TA for 6 terms, including courses on UNIX, operating systems, and logic.

Selected Awards

- Natural Sciences and Engineering Research Council (NSERC) Postdoctoral Fellowship, 2005-2007: Very selective fellowship from the Canadian national funding agency (analogous to the NSF in the USA)
- Walter C. Sumner Memorial Fellowship, U. Toronto, 2004-2005
- NSERC PGS-B Scholarship, 2000-2002; PGS-A Scholarship, 1998-2000: The premier Canadian national scholarships for graduate studies in the sciences
- The Gold Medal in Computing Science, U of Alberta, 1998
- The Dean's Silver Medal for Science, U of Alberta, 1998
- An SHL Systemhouse President's award for education and technology, U of Alberta, 1997
- The Terence Holowach Memorial Prize from the Department of Computing Science, University of Alberta, 1996
- The Cyril G. Wates Memorial Prize for achievement in first year algebra, U of Alberta, 1995
- Gold and silver medals, the Sir Winston S. Churchill parliamentary debate competition

Selected Extracurricular Activities

- Competitive debater since high school, contestant in 1997/1998 World Universities Debating Championship in Athens, Greece
- Avid juggler, SCUBA diver, squash player

References are available upon request