

Curriculum Vitae

Matthew Adam Skala
14-470 Roncesvalles Ave.
Toronto, Ontario
M6R 2N5

mskala@ansuz.sooke.bc.ca
<http://ansuz.sooke.bc.ca/>

+1 416 535 7045



Education

- 2001–2008** PhD. in Computer Science.
University of Waterloo, Waterloo, Ontario. Supervised by Ian Munro. Thesis title: Aspects of metric spaces in computation. GPA: 92%
- 1999–2001** M.Sc. in Computer Science.
University of Victoria, Victoria, BC. Supervised by Wendy Myrvold. Thesis title: Generation of graphs embedded on the torus. GPA: 9.00/9.00
- 1995–1999** B.Sc. in Computer Science/Mathematics Combined (Co-op).
University of Victoria, Victoria, BC. With distinction. GPA: 8.18/9.00
- 1994–1995** University Transfer: Sciences I.
Camosun College, Victoria, BC. GPA: 8.63/9.00
- 1990–1994** Diploma in Electronic Design Technology.
National Radio Institute, Washington, DC, USA. (Correspondence.) With highest honors.

Employment

- 2009–** Visiting Scholar
Computational Linguistics Group, University of Toronto, Toronto, Ontario.
Research in computational linguistics, specifically the algorithmic aspects of stylistic analysis, logic programming, grammar analysis. Writing of academic papers, participation in group activities; collaboration and liason with InkPot (below).
- 2008–** Postdoctoral Researcher (part-time)
Algorithms and Complexity Group, University of Waterloo, Waterloo, Ontario.

Conducted research in algorithms and data structures for organization and retrieval of spatial data. Participated in group meetings, design of algorithms and data structures, and prepared internal documentation and academic papers on research topics.

2005–2008 Research Consultant

InkPot/HealthDoc, University of Waterloo, Waterloo, Ontario.

Designed, implemented, and maintained software modules for computational linguistics research, in Prolog, experimental logic programming languages, Perl, and Java. Assembled corpora, conducted software tests, debugged grammars, and acted as liason between domain experts and technical workers.

2001–2007 Teaching Assistant

University of Waterloo, Waterloo, Ontario.

Prepared, administered, and marked assignments and examinations. Wrote course content. Delivered lectures and tutorials. Handled communication with students and among other course staff in person and electronically.

2001–2008 Research Assistant

Algorithms and Complexity Group, University of Waterloo, Waterloo, Ontario.

Conducted research on theoretical computer science. Designed and implemented experimental studies. Created and presented mathematical proofs. Gave seminars. Reviewed literature. Wrote and typeset scientific papers with \LaTeX .

1996–1999 Research Assistant (co-op and contract)

AFT/Methods and Systems Group, Pacific Forestry Centre, Victoria, BC.

Trained software agents, prepared data products, wrote documentation, and assisted research for AI-based remote sensing/GIS data management and integration system, using Prolog, Perl, C, FORTRAN, SQL, and proprietary GIS and database scripting languages, under Solaris and IRIX. Performed data recovery, wrote documentation, and did system administration for robotic tape storage system.

1997–1998 Programmer

A.W.A.R.E. Academy of Literacy, Victoria, BC.

Managed software aspects of educational CD-ROM research project. Specified programming environment (Macromedia Director under MacOS), designed system, and directed implementation, with team of programmers, artists, and educators. Invented signal processing algorithms for animation/speech synchronization.

1997 Software Design Co-op

ServiceConnections for ACI Team, MPR Extensys (now ISM-BC), Burnaby, BC.

Tested, maintained, and ported a client/server database application for long-distance telephone company customer service. Used Delphi under Windows 95, C++ under Windows NT and HP-UX, SQL (Oracle) and proprietary database interfaces, and TCL.

1996 Software Development Co-op
HARBOR Division of Interlink Computer Sciences, Calgary, Alberta
Maintained communications drivers and multiplatform configuration management/make system, and designed and implemented installation programs, for mixed PC environment LAN backup products. Used C and XVT under OS/2, Windows 95, and Windows NT.

1993–2000 System Operator (volunteer)
Boy Scouts of Canada (1993–1994), independent (1994–1999), Big Blue and Cousins (1999–2000), Victoria, BC.
Administered public network services. Handled user relations and programming including MOO adventure game, FTS/QWK message network, and complete BBS package, under DOS and Linux, using Maximus-CBCS and Perl. Managed systems department including Windows/Linux dialup BBS and intranet for local PC users' group.

Refereed journal articles

[1] Skala, M. 2009. Counting distance permutations. *Journal of Discrete Algorithms*, 7(1):pp. 49–61.

Papers in conference proceedings

[1] Dorriv, R.; Durocher, S.; Farzan, A.; Fraser, R.; López-Ortiz, A.; Munro, J. I.; Salinger, A.; and Skala, M. Finding a Hausdorff core of a polygon: On convex polygon containment with bounded Hausdorff distance. Accepted to WADS'09.

[2] Skala, M. 2008. On the complexity of reverse similarity search. In Chávez, E. and Navarro, G., eds., *First International Workshop on Similarity Search and Applications (SISAP 2008)*, Cancun, Mexico, April 11–12, 2008, pp. 149–156. IEEE.

[3] Skala, M. 2008. Counting distance permutations. In Chávez, E. and Navarro, G., eds., *First International Workshop on Similarity Search and Applications (SISAP 2008)*, Cancun, Mexico, April 11–12, 2008, pp. 69–76. IEEE.

[4] Skala, M. 2005. Measuring the difficulty of distance-based indexing. In Consens, M. P. and Navarro, G., eds., *Proceedings of the 12th International*

Conference on String Processing and Information Retrieval (SPIRE 2005), Buenos Aires, Argentina, November 2–4, 2005, vol. 3772 of *Lecture Notes in Computer Science*, pp. 103–114. Springer.

- [5] Goodenough, D. G.; Charlebois, D.; Bhogal, A. S.; Dyk, A.; and Skala, M. 1999. SEIDAM: A flexible and interoperable metadata-driven system for intelligent forest monitoring. In Stein, T. I., ed., *Proceedings of the International Geoscience and Remote Sensing Symposium 1999 (IGARSS'99), Hamburg, Germany, June 28–July 2, 1999*, vol. 2, pp. 1338–1341. IEEE.
- [6] Skala, M. 1998. A limited-diffusion algorithm for blind substring search. In *Proceedings of the 10th Annual Canadian Information Technology Security Symposium, Ottawa, Ontario, June 1–8, 1998*, pp. 397–410. Communications Security Establishment. Winner of Best Student Paper award.

Other conference presentations

- [1] Skala, M. 2009. Constraint satisfaction in string spaces. In *BIRS 09w5124: Mathematics of String Spaces and Algorithmic Applications, Banff, Alberta, January 25–30, 2009*. Banff International Research Station.
- [2] Skala, M. 2005. Balancing the books with fiat goods. In *OpenCity 2005, Winnipeg, Manitoba, August 17–19, 2005*. University of Winnipeg. Invited talk by video.
- [3] Skala, M. and Myrvold, W. 2001. Fast generation of graphs embedded on the torus. In *32nd Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Baton Rouge, Louisiana, USA, February 26–March 2, 2001*.

Research seminars and guest lectures

- [1] Skala, M. Nov. 11-17 2008. Introduction to Prolog. CS 245 guest lectures, David R. Cheriton School of Computer Science, University of Waterloo.
- [2] Skala, M. Aug. 20, 2008. Generating variant sudoku puzzles. Algorithms and Complexity Group Seminar, David R. Cheriton School of Computer Science, University of Waterloo.
- [3] Skala, M. Jul. 11, 2008. Aspects of metric spaces in computation. Theory Group Seminar, Department of Computer Science, University of Toronto.
- [4] Skala, M. Feb. 6, 2008. On the complexity of reverse similarity search. Algorithms and Complexity Group Seminar, David R. Cheriton School of Computer Science, University of Waterloo.

- [5] Skala, M. May 10, 2006. Distance permutations in Euclidean spaces. Algorithms and Complexity Group Seminar, David R. Cheriton School of Computer Science, University of Waterloo.
- [6] Skala, M. Oct. 18–20 2005. Introduction to Prolog. CS 486 guest lectures, David R. Cheriton School of Computer Science, University of Waterloo.
- [7] Skala, M. Oct. 18, 2005. Measuring the difficulty of distance-based indexing. Algorithms and Complexity Group Seminar, David R. Cheriton School of Computer Science, University of Waterloo.
- [8] Skala, M. Mar. 24, 2003. Protecting lawful private communications. In *Lawful Access: How deep should police dig into your files (when looking for terrorists)?*. Information Rights Salon and Faculty of Information Studies, University of Toronto.
- [9] Skala, M. Mar. 16, 2001. A practical embedding generator, or 16 million stupid torus tricks. Combinatorial Algorithms Group Seminar, Department of Computer Science, University of Victoria.
- [10] Skala, M. Feb. 16, 2001. Fast generation of graphs embedded on surfaces. Combinatorial Algorithms Group Seminar, Department of Computer Science, University of Victoria.

Magazine articles

- [1] Skala, M.; Bonfield, B.; and Torpey, M. F. Feb. 15, 2008. Enforcing copyright. *Library Journal*, 133(3):p. 28.

Informal talks

- [1] Skala, M. Jan. 31, 2007. Brick Brewing Co., Ltd. UW Investment Group.
- [2] Skala, M. Mar. 15, 2006. North American Palladium, Ltd. UW Investment Group.
- [3] Skala, M. Feb. 16, 2005. Contributing to open source projects. University of Waterloo Debian Interest Group (UW-DIG).
- [4] Skala, M. Aug. 14, 2001. Freenet. Victoria Linux Users' Group (VLUG).
- [5] Skala, M. and Constantine, C. B. Nov. 14, 2000. Everything MP3. Victoria Linux Users' Group (VLUG).
- [6] Skala, M. Feb. 9, 1999. Perl: Software duct tape. Victoria Linux Users' Group (VLUG).

Awards and scholarships

Academic

- 2006–2007** University of Waterloo Mathematics Faculty Graduate Scholarship
- 2003–2004** University of Waterloo Graduate Incentive Award
- 2001–2003** Ontario Go-Bell Scholarship
- 2001–2004** NSERC Postgraduate Scholarship B (including one year of PGS A paid at the PGS B level)
- 2000** University of Victoria President's Research Scholarship
- 2000–2001** NSERC Postgraduate Scholarship A
- 1999** BC ASI Graduate Scholarship
- 1999–2000** University of Victoria Fellowship
- 1999** University of Victoria Computer Science Co-Op Report Prize
- 1998** Paul Smith Memorial Prize (University of Victoria award for performance in Putnam Mathematical Competition)
- 1998** Communications Security Establishment Best Student Paper Award

Others of note

- 2000** Peacefire Honorary Teenager (for youth rights activism)
- 1991** Boy Scouts of Canada Chief Scout's Award (highest award in Scouting)

Teaching assistantships

University of Waterloo

- CS 486/686** Introduction to Artificial Intelligence (4×)
- CS 457/657** System Performance Evaluation (4×)
- CS 450/650** Computer Architecture (2×)
- CS 360** Introduction to the Theory of Computing (2×)
- CS 350** Operating Systems
- CS 246** Software Abstraction and Specification

University of Victoria

C SC 482A/582A Topics in Algorithms/Theoretical Computer Science: “Cryptography”

Service as referee

ICALP 2008; WEA 2008 (2×); ALENEX 2008 (2×); ALENEX 2006 (2×); ICALP 2006 (8×); WEA 2006; SODA 2004; SODA 2001.

Organizations

IEEE (Member); **Club That Really Likes Anime** (CTRL-A; President Summer 2004, Electronic Communications Officer Fall 2004–Winter 2006, Subtitling Coordinator Summer 2007); **Victoria Linux Users’ Group** (VLUG; co-founder, Secretary Fall 1998–Summer 2001); **Greater Victoria PC Users’ Group** (Big Blue and Cousins/BB&C; Systems Director 1999–2000)

References on request.

Waterloo, Ontario

April 27, 2009