

Morgan Kan

Education

- 2004-2007
- **MSc in Computer Science, University of Alberta:** GPA 3.8/4.0
 - MSc Thesis: *Postgame Analysis of Poker Decisions*
 - Course Work: Algorithmic Graph Theory, Computer Network Protocols, Heuristic Search, Parallel Programming
- 2000-2004
- **BSc in Computer Science, University of Alberta:** GPA 3.9/4.0
 - Course Work Highlights: Algorithms I/II, Compiler Design, Computational Geometry, Formal Languages and Automata, Intelligent Systems, Introductory Networking, Operating System Concepts

Experience

- 2007-...
- **Programmer Analyst, University of Alberta:**
 - Built a world champion poker AI (won the 2007 AAAI bankroll competition).
 - Implemented in Python with C extensions for efficiency-critical code.
 - Helped organize and run the first man-machine poker competition.
 - Designed and maintained the match web page (<http://poker.cs.ualberta.ca/man-machine>).
 - Built a web application to take poker logs and provide useful analysis.
- 2004-2007
- **Graduate Student, University of Alberta:**
 - Developed an analysis tool (DIVAT) for heads-up limit Texas Hold'em.
 - Wrote an MSc thesis on the DIVAT tool after it was implemented in C.
 - DIVAT was a component of the AAAI'06 poker-bot champion Hyperborean.
 - Built a strong hex playing program, implemented in C++.
 - The hex program won second place at the 11th computer olympiad in Italy, 2006.
- 2004
- **Research Assistant, University of Alberta:**
 - Readied the distributed **Trellis File System** for public release.
 - Performed code coverage testing, unit testing, and cross-platform tests.
 - Wrote extensive documentation for the Trellis system.
 - Wrote tools to run the **Canadian Internetworked Scientific Supercomputer** (CISS) 3.
- 2003-2004
- **Programmer Analyst, CNS, University of Alberta:**
 - Built the **Westgrid** supercomputer user registration system.
 - Setup the database, and wrote php code to access and modify it.
 - Provided support and wrote documentation for the end system.
- 2003
- **Research Assistant, University of Alberta:**
 - Added functionality to the open-ssh code base to enable building of meta-computers.
 - Worked on aspects of the Trellis File System and Trellis Security Infrastructure.
 - Learned theories and practices of high performance computing and grid computing.
 - Implementations involved C programming, and Python, Perl, and Shell scripting.
- 2002-2003
- **Research Assistant, University of Alberta:**
 - Implemented alpha-beta, depth-first search, and max-flow algorithms.
 - Learned the use of the LEDA graph package.
 - Solved the game of 7x7 hex using depth-first search and clever heuristics.
 - Implementation was in C and C++.

Skills

Languages	<ul style="list-style-type: none">• Proficient in: C, Python, HTML, UNIX Shells.• Familiar with: C++, Java, Perl, SQL, CSS, PHP, Lisp, Prolog.
Operating Systems	<ul style="list-style-type: none">• Linux, Mac OS X, Windows 98/2000/XP.
Tools	<ul style="list-style-type: none">• CVS/SVN, Make, VIM, L^AT_EX, Apache, GNU toolchain, MySQL, Wordpress

Publications

- Morgan Kan. Postgame Analysis of Poker Decisions. *MSc. Thesis*. 2007.
- Paul Lu, Mike Closson, Cam Macdonell, Paul Nalos, Danny Ngo, Morgan Kan, and Mark Lee. The Trellis Security Infrastructure for Overlay Metacomputers and Bridged Distributed File Systems. *Journal of Parallel and Distributed Computing*. 66(9):1181-1188. September 2006.
- Martin Zinkevich, Michael Bowling, Nolan Bard, Morgan Kan, Darse Billings. Optimal Unbiased Estimators for Evaluating Agent Performance. *American Association of Artificial Intelligence National Conference (AAAI)*. pp 573-578. 2006.
- Darse Billings, Morgan Kan. A Tool for the Direct Assessment of Poker Decisions. *International Computer Games Association Journal* 29(3):119-142. 2006.
- Ryan Hayward, Yngvi Bjornsson, Michael Johanson, Morgan Kan, Nathan Po, Jack van Rijswijk. Solving 7x7 Hex with Domination, Fill-in, and Virtual Connections. *Theoretical Computer Science*. 349(2):123-129. 2005
- Morgan Kan, Danny Ngo, Mark Lee, Paul Lu, Nolan Bard, Michael Closson, Meng Ding, Mark Goldenberg, Nicholas Lamb, Ron Senda, Edmund Sumbar, Yang Wang. The Trellis Security Infrastructure: A Layered Approach to Overlay Metacomputers. *18th International Symposium on High Performance Computing Systems and Applications (HPCS)*. pp 109-117. 2004
- Ryan Hayward, Yngvi Bjornsson, Michael Johanson, Morgan Kan, Nathan Po, Jack van Rijswijk. Solving 7x7 Hex: Virtual Connections and Game-State Reduction. *Advances in Computer Games: Many Games, Many Challenges*. 10th Advances in Computer Games Conference. Van den Herik/Iida/Heinz editors. pp 261-278.

Awards and Certificates

- Graduate Student Scholarship, 2005
- Walter John's Memorial Scholarship 2005, 2004
- iCore Graduate Scholarship 2005, 2004
- NSERC Postgraduate Scholarship 2005, 2004
- Dean's Silver Medal in Science 2004
- NSERC Undergraduate Research Scholarship 2004, 2003, 2002
- Amdahl Academic Achievement Scholarship in Computing Science 2003
- Jason Lang Academic Scholarship 2003, 2002, 2001
- Queen's Venturer Scouting Award 2000
- Roland Stansfield Memorial Scholarship 2000
- Alexander Rutherford Academic Scholarship 2000

Personal Interests

Personal Interests	<ul style="list-style-type: none">• Poker, photography, ballroom dancing, camping, hiking, music, sports, and games.
--------------------	--