Mitchell Keith Bloch

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Objective

I am interested in using my knowledge of artificial intelligence, reinforcement learning, software development, and game development to make clever, fun, and useful things and to teach others to be able to do the same.

Academic Qualifications

Doctor of Philosophy Candidate, Computer Science and Engineering (University of Michigan, in progress)
Master of Science in Engineering, Computer Science and Engineering (University of Michigan, April 2010)
Bachelor of Science in Engineering, Computer Science, *Summa Cum Laude* (University of Michigan, April 2008)
University of Michigan College of Engineering Dean's Honor List for Academic Distinction (every undergraduate semester)

Computer Science and Programming Expertise

- C & C++
- Python
- Object-Oriented Programming
- OpenGL & Direct3D
- OpenAL
- Simple Directmedia Layer
- Unity
- Reinforcement Learning
- Soar
- HTML, CSS, & JavaScript
- Linux
- Microsoft Visual Studio
- The GIMP
- 3ds Max

Work Experience

Instructor for EECS 494: Computer Game Design and Implementation (Fall 2016)
Graduate Student Instructor for EECS 494: Computer Game Design and Implementation (Fall 2008 - Winter 2015)
Lead Instructor for Advanced C++: Game Development, Camp CAEN (Summer 2007 - 2010)
Graduate Student Instructor for EECS 381: Advanced and Object-Oriented Programming (Winter semester, 2009)
Wrote a cross-platform 3D game engine and made it available at http://zenilib.com (Summer 2006)
Used by EECS 494: Computer Game Design and Implementation, and Advanced C++: Game Development (Camp CAEN)
Tutored undergraduate computer science courses at the University of Michigan (Winter 2006)
Brought the Wolverine Soft website up to XHTML 1.1 compliance and made it user editable using PHP and MySQL (Summer 2005); added security and session management features in a redesign (Summer 2006)
Did research as an intern at the Artificial Intelligence Laboratory at the University of Michigan (Summer 2003)

Conferences and Presentations

Soar Workshop 36	Presented Automatic Value Function Refinement and Unrefinement for Relational RL.
RLDM 2015	Presented The Carli Architecture-Efficient Value Function Specialization for Relational Reinforcement Learning. Reinforcement Learning and Decision Making Meetings 2015
Soar Workshop 35	Presented Relational Blocks World Experiments in Carli
Soar Workshop 34	Presented Value Function Representation: Rete for Reinforcement Learning
RLDM 2013	Presented Online Value Function Improvement
Soar Workshop 33	Presented Online Value Function Improvement
Soar Workshop 32	Presented Heuristic Value Function Revision
Soar Workshop 31	Presented Improving Off-Policy Hierarchical Reinforcement Learning in Soar
Soar Workshop 30	Presented MAXQ Hierarchical Reinforcement Learning in Soar
Soar Workshop 29	Presented Hierarchical Reinforcement Learning in the Taxicab Domain
FDG 2009	Attended
IGDA Southwest, Dec. 2004	Presented a Java applet game of Battleship featuring non-cheating opponent game AI

Merit Scholarships and Prizes

2004 - 2008	Bell Charitable Trust: Gloria Wille Bell and Carlos R. Bell Scholarship
2007	Winner of the 4th Wolverine Soft 48-Hour Game Development Competition
2004 - 2006	Michigan Merit Award and Competitive Scholarship
2004 - 2005	University of Michigan Regents Scholarship
2004	National Merit Scholarship Finalist
2004	AP Scholar with Distinction and National Honor Roll
2003 - 2004	USA Mathematical Talent Search Silver Prize Winner

Memberships

Member of Wolverine Soft, the video game development student group at the University of Michigan (2004 - 2016)
Project Advisor (2009 - 2011), President (2007 - 2008), Webmaster (2005 - 2007)
Tau Beta Pi (TBP) The Engineering Honor Society, Michigan Gamma Chapter (2006 - 2008)
Eta Kappa Nu (HKN) National Electrical Engineering Honor Society, Beta Epsilon Chapter (2006 - ?)