

Brett J. Borghetti

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EDUCATION

Pursuing Doctorate of Philosophy, Computer Science, September 2005 – August 2008

University of Minnesota, Twin Cities, MN

Dissertation: “Opponent Modeling in Interesting Adversarial Environments”

Advisor: Dr. Maria Gini.

Master of Science, Computer Systems, Graduated December 1996

United States Air Force Institute of Technology (AFIT), Dayton, OH

Thesis: “Inference Algorithm Performance and Selection Under Constrained Resources”

Advisor: Dr. Eugene Santos, Jr.

Bachelor of Science, Electrical Engineering, Graduated May 1992

Worcester Polytechnic Institute (WPI), Worcester, MA

Air Force Reserve Officer Training Corps, Commissioned Officer, May 1992

USAF ROTC Detachment 340, WPI, Worcester, MA

RESEARCH INTERESTS

- Autonomous Trading / Supply Chain Management Agents
- Team planning and communication during autonomous multi-agent tasks

RESEARCH

2005- PhD, Computer Science, University of Minnesota, Minnesota, MN

- Built Pokeminn –4th place in the 2007 International Computer Poker Competition (Limit Equilibrium Category)
- Created methods for simulating cross-spectrum competition levels for testing TAC agents
- Developed metrics for analyzing TAC agent performance in real time and post competition

1995-1996 Master’s degree, Computer Systems, Air Force Institute of Technology, Dayton, OH

- Adapted A* search and genetic algorithms for inference over Bayesian Knowledge Base
- Engineered distributed inference engine across 40-machine LAN
- Conducted experiments and codified relationship between data characteristics and variance in algorithm performance; Proposed system for automating the relationship determination and optimal algorithm selection for inference over a given data set

PUBLICATIONS

“**Weighted Prediction Divergence for Metareasoning**”: Brett Borghetti and Maria Gini. To appear in AAAI2008 Workshop on Metareasoning

“**A Market-Pressure-Based Performance Evaluator for TAC-SCM**”: Brett Borghetti, Eric Sodomka, Maria Gini, John Collins. Trading Agent Design and Analysis & Agent Mediated Electronic Commerce VIII Joint workshop at AAMAS 2006

“**Performance Evaluation Methods for the Trading Agent Competition**”: Brett Borghetti, Eric Sodomka. Student abstract and poster program at AAAI 2006.

“**Inferencing Over Incomplete Solution Spaces with Genetic Algorithms for Probabilistic Reasoning.**”: Brett Borghetti, Ed Williams, Eugene Santos, Jr. - For Midwest Artificial Intelligence and Cognitive Science Conference: 15 Feb 1996: <http://citeseer.ist.psu.edu/borghetti96inferencing.html>

“**Inference Algorithm Performance and Selection Under Constrained Resources**”: Brett Borghetti – Master’s Thesis: December 1996: <http://citeseer.ist.psu.edu/borghetti96inference.html>

TEACHING EXPERIENCE

1991-1992 Elementary Solar Education Project, Worcester Polytechnic Institute, Worcester, MA

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- Investigating feasibility of a program where high school students teach math and science to elementary school students to re-invigorate science and math interest in both groups of students
- Developed course package for teaching basics of electricity to second grade students (focus on solar power & generation)
- Produced 5 minute video using cartoons to demonstrate basic science / physics of electrical power generation for the elementary school students
- Taught 5 hour-long, hands-on workshops for second grade students at two schools to fine tune the course content
- Created recruiting video to attract high school students to run the workshops in elementary schools
- Recruited high school students and trained them how to teach the material to second grade students
- Developed analysis of results, proposed follow-on plans and applied for project-continuation grants

PROFESSIONAL EXPERIENCE

- 2003-2005 Chief, C4I Systems Development: **Air Intelligence Agency**, Lackland Air Force Base, TX
- Directed acquisition and sustainment of globally-deployed advanced computer system
 - Collaborated to develop Air-Force-wide information technology solutions with Air Staff and other System Product Offices
- 2002-2003 Branch Chief, Aircraft Branch: **National Air Intelligence Center**, Wright-Patterson Air Force Base (WPAFB), OH
- Direct supervisor of 28 personnel; managed budget, training, and production
 - Responsible for Department of Defense scientific and technological assessments of foreign threat aircraft
- 2001-2002 Operations Officer, Aerodynamic Systems Division: **National Air Intelligence Center**, WPAFB, OH
- Managed day-to-day operations of 70-person division
 - Acted as executive officer for the directorate, senior intelligence analyst for the division, and division chief on multiple occasions
 - Coordinated computer modeling and simulation efforts in the division
 - Managed personnel, budget, computer support, awards and recognition, training, and military performance reports
- 2000-2001 Foreign Air-To-Air Systems Engineer: **National Air Intelligence Center**, Wright WPAFB, OH
- Led team of government and contractor personnel in development of 10 threat Air-To-Air Missile models for the F/A-22 System Program Office's \$3,300,000 Air Combat Simulator Program
 - Self-taught modeling software [MATLAB/Simulink] and trained other government personnel in its use during government acceptance test of the models
 - Led system engineering and all-source intelligence analysis for several foreign Air-To-Air Missiles
- 1997-2000 Year 2000 Systems Engineer: **United States Strategic Command**, Offutt Air Force Base, NE
- Led team of 12 contractors and government personnel and managed program for command-wide information automation analysis, engineering, integration, testing and to identify and resolve communications and computer systems problems for the Year 2000 (Y2K) Problem
 - Developed end-to-end Y2K test plans, contingency plans and configuration management processes, trained command staff, briefed US government cabinet-level personnel
- 1995-1996 Graduate Student – Artificial Intelligence / Software Engineering: **Air Force Institute of Technology**, WPAFB, OH
- Advanced research in areas of expert and knowledge-based systems, inference, and automated algorithm selection
- 1993-1995 F-16 Training Systems Engineer: **Training Systems Product Group**, WPAFB, OH
- Led 3 engineering companies in development of high-fidelity maintenance simulators for the F-16 aircraft engine start system, propulsion, and test equipment

HONORS/AFFILIATIONS

Air Force Commendation Medal, 2005
Air Force Meritorious Service Medal, 2003
Joint Service Commendation Medal & Oak Leaf Cluster, 1999-2000
USSTRATCOM/J6 (Directorate) Company Grade Officer of the Quarter for Oct-Dec 1999
Air Force Achievement Medal, 1995
Air Force Reserve Officer Training Corps Distinguished Graduate, 1992
Eta Kappa Nu, Electrical Engineering Honor Society, 1992

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Tau Beta Pi, National Engineering Honor Society, 1992

Air Force Reserve Officer Training Corps Scholarship, 1988-1992