Aaron Boo Boon Khoo

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EDUCATION

Ph.D. Computer Science ▪ June 2003
Northwestern University
Implementing Efficient Joint Beliefs on Multi-Robot Teams
Professor Ian Horswill, advisor

M.S. Computer Science ▪ December 2002
Northwestern University
Professor Ian Horswill, advisor

Knox College , Galesburg, IL ▪ June 1996
B.A. in Computer Science & Mathematics.
Graduated magna cum laude.

AWARDS

- A member of the winning team for the 2001 Nils Nilsson Prize for Integrating AI Technologies.

- Dissertation Year Henderson Fellowship 2002-03.

PUBLICATIONS

Dissertation
- Aaron Khoo, *Implementing Efficient Joint Beliefs on Multi-Robot Teams*, Ph.D. Dissertation. Northwestern University Computer Science Department, June 2003 (Tech. Report NWU-CS-03-20).

Journal Papers
- Aaron Khoo and Ian Horswill, "Grounding Inference in Distributed Multi-Robot Environments", *Journal of Robotics and Autonomous Systems*, Special issue on perceptual anchoring, 43(2-3):85-96, May 2003.
- Aaron Khoo and Robert Zubek, "Applying Inexpensive AI Techniques to Computer Games", *IEEE Intelligent Systems*, Special Issue on Artificial Intelligence in Infotainment, 17(4), July/August 2002.

Refereed Conference Papers
- Aaron Khoo and Ian Horswill, "An Efficient Coordination Architecture for Autonomous Robot Teams", *Proceedings of the IEEE International Conference on Robotics and Automation 2002*, IEEE CS Press, Los Alamitos, Calif., 2002, pp. 287-292.

Workshops
- Aaron Khoo and Ian Horswill, "Efficient Inference Grounding for Distributed Multi-Robot Teams", *Multi-Robot Systems: From Swarms to Intelligent Automata Volume II*, Proceedings from the 2003 International Workshop on Multi-Robot Systems, Alan Schultz, Lynne E. Parker, and Frank Schneider(eds.), Kluwer Publishing, 2003.
- Aaron Khoo, Greg Dunham, Nick Trienens, Sanjay Sood, "Efficient, Realistic NPC Control Systems using Behavior-Based Techniques", *Proceedings of the AAAI 2002 Spring Symposium Series: Artificial Intelligence and Interactive Entertainment*, AAAI tech. report, SS-02-01, AAAI Press, Menlo Park, Calif., 2002
- Robert Zubek and Aaron Khoo, "Making the Human Care: On Building Engaging Bots", *Proceedings of the AAAI 2002 Spring Symposium Series: Artificial Intelligence and Interactive Entertainment*, AAAI tech. report, SS-02-01, AAAI Press, Menlo Park, Calif., 2002
- Aaron Khoo and Ian Horswill , "HIVEMind : Grounding Inference in Cooperative Activity", *Proceedings of the AAAI 2001 Fall Symposium Series: Anchoring Symbols to Sensor Data in Single and Multiple Robot Systems*, AAAI tech. report, FS-01-01, AAAI Press, Menlo Park, Calif., 2002
- Ian Horswill, Robert Zubek, Aaron Khoo, Christopher Dac Le and Shawn Nicholson, "The Cerebus Project", *Proceedings of the AAAI 2000 Fall Symposium Series : Parallel Cognition and Embodied Agents*, 2000.

Other
- Aaron Khoo, Robin Hunicke, Greg Dunham, Nick Trienens and Muon Van, "FlexBot, Groo, Patton and Hamlet: Research using Computer Games as a Platform", Technical content paper for Intelligent Systems Demonstration, *Proceedings of the Eighteenth National Conference on Artificial Intelligence*.

Invited Presentation
- Aaron Khoo , "HIVEMind: Highly Interconnected Verbose Mind" Poster Multi-Robot Workshop at the Naval Research Laboratories, March 2002.

System Demonstration
- Aaron Khoo, Greg Dunham, Nick Trienens, "FlexBot, Groo, Patton and Hamlet: Research using Computer Games as a Platform", Intelligent Systems Demonstration at 2002 AAAI Conference in Edmonton.

Research Assistant, Northwestern University, Evanston, IL 1998 – Present
Work on autonomous robots; focus on teamwork models for agent teams.

- Developed HIVEMind, an architecture for coordination of cooperative robot teams.

- Managed undergraduate students during development of the FlexBot project (**http://flexbot.cs.northwestern.edu**), an API for creating agents in the Half-Life game.

Internet Consultant, Metamor Technologies, Chicago, IL, 1996 – 1998
Worked on two biggest client accounts : United Healthcare and American Medical Association. Developed database backend CGI-based Internet applications. Managed small teams of 5-10 people.

Technical Lab Assistant, Knox College Computer Lab, Galesburg, IL, 1993 – 1996
Provided technical support for students. Supported multiple platforms include NeXT, WinTel, Apple Macs.

System Administrator for NeXT and Apple Mac cluster, Computer Science and Math Dept, Galesburg, IL, 1993-1995
Administrated the Mathematics Dept. network. Managed 12 NeXT boxes running NeXTStep, 10 Apples running MacOS.

At Northwestern University, Evanston, IL:

Teaching Assistant – to Professor Brad Adelberg in "CS339 - Introduction to Database Systems." ▪ Spring 1999
Met with students upon request, and graded all written work, including final exam papers.

Teaching Assistant – to Professor Shashi Buluswar in "CS311 – Data Structure and Data Management." ▪ Fall 1999
Collaborated on curriculum and exam development, met with students upon request, and graded all written work, including final exam papers.

Teaching Assistant – to Professor Ian Horswill in "CS395 – Behavior-based Robotics" ▪ Fall 2000/01/02
Collaborated on assignment and exam development, met with students on request, assisted in grading projects and assignments.

American Association of Artificial Intelligence (AAAI)

REFERENCES

Ian Horswill
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Ken Forbus
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