

DAVID C. BROGAN

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Research Interests: Computer animation, physical simulation, motion planning, interactive environments, reinforcement learning, control theory, robotics, distributed simulation.

Education

Ph.D in Computer Science, expected September 1999. GPA: 3.9
Georgia Institute of Technology, Atlanta, GA
Research Advisor: Professor Jessica Hodgins
Thesis Title: Levels of Detail in the Simulation, Planning, and Control of Non-Homogeneous Groups of Dynamically Simulated Characters
B.A. in Mathematics
University of Virginia, Charlottesville, VA, 1992. GPA: 3.5
Minor areas: Computer Science and Economics

Work Experience

Graduate Research Assistant for Professor Jessica Hodgins Summer 1993 - Present
Graphics, Visualization, and Usability Center, Georgia Institute of Technology

Developing autonomous navigation algorithms for groups of dynamically simulated human-like characters. Using high-level control strategies to automatically direct a variety of characters in virtual environments and simulation levels of detail to reduce the computational cost. Currently building distributed interactive cycling environment. Users will race with, and against, teams of dynamically simulated bicyclists on a realistic model of 1996 Olympic bicycle road race course.

Research Intern for Dr. John Barrus Summer 1995
Mitsubishi Electric Research Lab, Cambridge, Massachusetts

Developed animated agents used within the virtual environment, Diamond Park. Research involved core code development for the distributed interactive simulation environment, SPLINE.

Graduate Research Assistant for Professor Janet Kolodner Fall 1992 - Spring 1993
Artificial Intelligence Group, College of Computing, Georgia Institute of Technology

Worked on several aspects of Archie II, a Case-Based Architect's Design Guide. Developed indexing schemes for case storage and developed interfaces in CLIM on Symbolics.

Summer Intern, Automation and Research Computing Section Summers 1991, 1992
Federal Reserve Board, Washington, D.C.

System Administrator. Maintained over 200 Sun Workstations. Responsible for hardware installation and operating system upgrade. Developed Tcl/Tk programs to simplify system administration.

Academic Honors

1998-1999 College of Computing Outstanding Graduate Research Assistant Award
 1998-1999 GVV Research Award
 1998-1999 GVV Interdisciplinary Research Grant
 1996-1997 GVV Interdisciplinary Research Grant

Publications

- Journals:**
- Brogan, D. C., Metoyer, R. A., and Hodgins, J. K., 1998. "Dynamically Simulated Characters in Virtual Environments," *IEEE Computer Graphics and Applications*, September, 1998, pp 58-69.
- Waters, R., Anderson, D., Barrus, J., Brogan, D., Casey, M., McKeown, S., Nitta, T., Sterns, I., and Yerazunis, W., 1997. "Diamond Park and Spline: Social Virtual Reality with 3D Animation, Spoken Interaction, and Runtime Extendability," *Presence: Teleoperators and Virtual Environments*, 6:4, August, 1997, pp 461-481.
- Brogan, D. C. and Hodgins, J. K. "Group Behaviors for Systems with Significant Dynamics," *The Journal of Autonomous Robots*, 4:137-153, 1997. George A. Bekey, editor.
- Conferences:**
- Brogan, D. C., Metoyer, R. A., and Hodgins, J. K., 1997. "Dynamically Simulated Characters in Virtual Environments," Animation Sketch in *SIGGRAPH 1997*, Los Angeles, CA.
- Brogan, D. C. and Hodgins, J. K., 1995. "Group Behaviors for Systems with Significant Dynamics," *Proceedings of the 1995 IEEE/RSJ International Conference on Intelligent Robots and Systems*, Vol. 3, pp 528-534.
- Hodgins, J. K., Wooten, W. L., Brogan, D. C., O'Brien, J. F., 1995. "Animating Human Athletics," *Proceedings of SIGGRAPH 1995*, Los Angeles, CA, August 6-11. In *Computer Graphics*, pp 71-78.
- Hodgins, J. K., Brogan, D. C., and Wooten, W. L., 1994. "Realistic Motion for Animated Figures," abstract published in *Proceedings of Lifelike Computer Characters*, 55.
- Hodgins, J. K. and Brogan, D. C., 1994. "Robot Herds: Group Behaviors for Systems with Significant Dynamics," *Proceedings of Artificial Life IV*, 319-324.
- Invited Talks:**
- "Interactive Environments Containing Multiple Dynamically Simulated Agents," *DARPA Information Technology Office Graduate Student Workshop*, Arlington, VA, July 27th, 1998.
- Videos:**
- Group bicycle scene: "Atlanta in Motion" *SIGGRAPH 1996 Electronic Theater*

Commercial Demonstrations

Provided multiagent simulation for Hewlett-Packard booth at SIGGRAPH 1996.
Provided animated characters for Mitsubishi's Diamond Park booth at COMDEX 1995.

Activities

Reviewer for SIGGRAPH 1997, 1998
Reviewer for Applied AI Journal
Reviewer for IEEE Transactions on Robotics and Automation
College of Computing Faculty Recruiting Committee, 1998
College of Computing Intramural Basketball Team Captain, 1994-1998
College of Computing Graduate Student Council, 1992 - Present

References

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