

# Jan M. Allbeck, Ph.D.

Department of Computer Science  
Games and Intelligent Animation Laboratory  
George Mason University, 4400 University Drive MSN 4A5  
Fairfax, VA 22030  
703-993-1794; jallbeck@gmu.edu  
<http://cs.gmu.edu/~jallbeck>

## PROFESSIONAL PREPARATION

Bloomsburg University (Bloomsburg, PA) BA Mathematics, 1995  
Bloomsburg University (Bloomsburg, PA) BS Computer Science, 1995  
University of Pennsylvania (Philadelphia, PA) MSE Computer & Information Science, 1997  
University of Pennsylvania (Philadelphia, PA) Ph.D. Computer & Information Science, 2009

## APPOINTMENTS

George Mason University, Assistant Professor, 2009-present  
University of Pennsylvania, Associate Director, Center for Human Modeling & Simulation, 2004-2009  
University of Pennsylvania, Instructor, 2009  
University of Pennsylvania, Systems Programmer, 2001-2004  
University of Pennsylvania, Teaching Assistant, 1996-1997, 2007  
All-Byte Consulting, Computer Consultant, 1992-1995

## BRIEF RESEARCH SUMMARY

I have had the opportunity to explore many research areas. I have worked on virtual environments for training, synthesis and analysis of communicative gesture, individual differences such as emotion, personality, status, role, and culture, action and object semantic representations, statistically generated behaviors, aggregate (crowd) movement, task simulation for maintenance and training, motion capture, human factors tools, narratives and plots, technical instruction creation and delivery, American Sign Language generation, and situation understanding and representation. I am most drawn to research at the crossroads of animation, artificial intelligence, and psychology in the simulation of virtual humans. My current research combines individual differences, action and object representations, statistically generated behaviors, and aggregate movements, with the goal of generating functional virtual human populations.

## SELECTED PUBLICATIONS

- Allbeck, J.M. and Kress-Gazit, H. Constraints-Based Complex Behavior in Rich Environments. In Proceedings of the 10th International Conference on Intelligent Virtual Agents. Springer, 2010, pages 1-14.
- N. Pelechano, J.M. Allbeck, and N.I. Badler. Virtual Crowds: Methods, Simulation, and Control. San Rafael, CA: Morgan & Claypool Publishers, 2008.
- Allbeck, J.M. CAROSA: A Tool for Authoring NPCs. In Proceedings of Motion in Games. Springer, 2010, pages 182-193. N. Pelechano, J. Allbeck and N. Badler. Controlling Individual Agents in High-Density Crowd Simulation. ACM SIGGRAPH / Eurographics Symposium on Computer Animation (SCA) 2007 August 3-4, San Diego.
- R. Bindiganavale. W. Schuler, J. Allbeck, N. Badler, A. Joshi, and M. Palmer. "Dynamically Altering Agent Behaviors Using Natural Language Instructions". Proceedings of Autonomous Agents 2000, pp. 293-300.

## OTHER PUBLICATIONS

- Allbeck, J.M. and Badler, N.I. Simulating Human Activities for Synthetic Inputs to Sensor Systems. In Distributed Video Sensor Networks. Springer. 2011.
- F. Durupinar, J. Allbeck, N. Pelechano, and N. Badler. Creating Crowd Variation with the OCEAN Personality Model. Proceedings of Autonomous Agents and Multi-Agents Systems 2008. pp 1217-1220.
- N.I. Badler, J. Allbeck, S.J. Lee, R.J. Rabbitz, T.T. Broderick, and K.M. Mulkern. "New Behavioral Paradigms for Virtual Human Models." In SAE International Digital Human Modeling for Design and Engineering, 2005.
- J. Allbeck and N. Badler. "Creating Embodied Agents with Cultural Context," In R. Trapp and S. Payr (Eds.), Agent culture: Designing virtual characters for a multi-cultural world. New York: Lawrence Erlbaum Associates, 2004, pp. 107-126.
- J. Allbeck and N. Badler. "Representing and Parameterizing Agent Behaviors". In "Life-like Characters: Tools, Affective Functions and Applications." Helmut Prendinger and Mitsuru Ishizuka, Eds. Springer, Germany, 2003, pp. 19-38.

## SYNERGISTIC ACTIVITIES

- Co-Pi, ARO SUBTLE MURI W911NF-07-1-0216 Situation Understanding Bot Through Language and Environment.
- Conferences and Journals:
  - Co-chair, 10<sup>th</sup> International Conference on Intelligent Virtual Agents, September 2010, Philadelphia, PA.
  - Program committee, Virtual Storytelling 2003; CHI Workshop on Subtle Expressivity for Characters and Robots 2003; AAMAS Workshop on Embodied Conversational Characters as Individuals 2003; International Working Conference on Intelligent Virtual Agents 2005-2009; Computer Animation and Social Agents 2007; Autonomous Agents and Multi-Agent Systems, 2007-2010; Motion in Games, 2010.
  - Reviewer: Computer Graphics International, 2001, 2005; SIGGRAPH, 2001, 2003; Graphical Models Journal, 2001; Autonomous Agents, 2001; Computer Animation, 2001; Web3D, 2002; Autonomous Agents and Multi-agent Systems, 2002-2004; Computer-Human Interaction, 2003; SIGGRAPH, 2003; Intelligent Virtual Agents, 2003; Computer Graphics International, 2004; Eurographics, 2004-2005, 2009-2011; Technologies for Interactive Digital Storytelling and Entertainment, 2004; IEEE Transactions on Visualization and Computer Graphics, 2004; International Conference on Computer Animation and Social Agents 2005; AAAI Workshop on Modular Construction of Human-like Intelligence, 2005, Journal of Computer-Aided Design, 2006; Pacific Graphics, 2007; International Conference on Entertainment Computing, 2007; Computer Animation and Virtual Worlds, 2007; Journal of Autonomous Agents and Multiagent Systems, 2008; SIGGRAPH Asia, 2008; IEEE Computer Graphics and Applications, 2008, 2010; Computers & Graphics Journal, 2010; Foundations of Digital Games, 2010.
- Recent Invited Presentations:
  - Newcastle University, School of Computing Science, Newcastle Upon Tyne, UK: November 19, 2010
  - Invited Speaker at Motion in Games 2010, Zeist, The Netherlands: November 2010
  - IDGA's Modeling and Simulation for Defense, Orlando, FL: August 4, 2010
  - Crowds Workshop at CASA, Saint Malo, France: June 3, 2010
  - Bowie State University, Bowie, MD: April 22, 2010
  - Stevens Institute of Technology, Hoboken, NJ: December 7, 2009