

Norman I. Badler Biographical Sketch

Director, Center for Human Modeling and Simulation
Professor, Computer and Information Science Department
University of Pennsylvania, Philadelphia, PA 19104-6389
215-898-7246/5862, 215-573-5577 (fax), badler@seas.upenn.edu

Professional Preparation:

BA 1970 Creative Studies (Mathematics), University of California, Santa Barbara
MSc 1971 Mathematics, University of Toronto
PhD 1975 Computer Science, University of Toronto (Ph.D. Dissertation: "Temporal scene analysis: Conceptual descriptions of object movements," John Mylopoulos, supervisor, 1975.

Appointments:

University of Pennsylvania, Assistant Professor, 1974-79
Associate Professor, 1979-86; Professor, 1987-present,
Cecilia Fidler Moore Professor and Chair, CIS, 1990-94.
Associate Dean, School of Engineering and Applied Science, 2001-2005.
Secondary appointment in Bioengineering.

Selected Publications:

- N. Pelechano and N. Badler. "Modeling crowd communication and trained leaders during maze-like building evacuation." To appear, IEEE Computer Graphics and Applications, November 2006.
- N. Badler, J. Allbeck, S.-J. Lee, R. Rabbitz, T. Broderick and K. Mulkern. "New behavioral paradigms for virtual human models." SAE Digital Human Modeling Conference, Iowa City, IA , 2005.
- L. Zhao, Y. Liu and N. Badler. "Applying empirical data on upper torso movement to real-time collision-free reach tasks." SAE Digital Human Modeling Conference, Iowa City, IA , 2005.
- J. Allbeck and N. Badler. "Embodied Autonomous Agents," In K. Stanney (Ed.), *Handbook of Virtual Environments*. Lawrence Erlbaum Associates, New York, 2002, pp. 313-332.
- N. Badler, R. Bindiganavale, J. Allbeck, W. Schuler, L. Zhao, M. Palmer. "Parameterized Action Representation for virtual human agents," In J. Cassell, J. Sullivan, S. Prevost, and E. Churchill (Eds.), *Embodied Conversational Agents*, MIT Press, 2000, pp. 256-284.

Other Publications:

- L. Zhao and N. Badler. "Acquiring and validating motion qualities from live limb gestures." *Graphical Models* 67(1), 2005, pp. 1-16.
- N. Badler, M. Palmer and R. Bindiganavale. "Animation control for real-time virtual humans," *Comm. of the ACM* 42(8), August 1999, pp. 65-73.
- R. Bindiganavale, W. Schuler, J. Allbeck, N. Badler, A. Joshi, and M. Palmer. "Dynamically Altering Agent Behaviors Using Natural Language Instructions." *Proc. Autonomous Agents and Multi-agent Systems*, June, 2000, pp. 293-300.
- J. Gratch, J. Rickel, E. Andre, N. Badler, J. Cassell, and E. Petajan. "Creating interactive virtual humans: Some assembly required." *IEEE Intelligent Systems*, 2002.
- N. Badler, C. Erignac and Y. Liu. "Virtual humans for validating maintenance procedures." *Comm. of the ACM*, July 2002, pp. 57-63.

Recent Grants and Contracts:

- ONR (VIRTE)
- Navy Special Warfare
- US Air Force Research Laboratory (WPAFB)
- NASA (Johnson Space Center)

- Lockheed-Martin (Internal R&D)
- National Science Foundation

Selected Professional Activities:

- Elected ACM National SIGGRAPH Vice-Chair 1979-81; re-elected 1981-83.
- Senior Editor, Computer Vision, Graphics and Image Processing Journal, 1982-90.
- Co-Editor-in-Chief, Graphical Models, 1989-present.
- General Co-Chair of Symposium on Computer Animation, Grenoble, France, August 2004.
- General Co-Chair of Computer Animation and Social Agents, New Brunswick, NJ, May 2003.
- General Co-Chair of Computer Animation, Geneva, June 2002.
- General Co-Chair of Computer Animation, Seoul, Korea, 2001.
- Distinguished Lecturer at U. of Houston (1998), Rice U. (1998), Oregon Research Institute (1997), Columbia U. (1993), Ohio State U. (1991), U. of Toronto (1991), MIT (1985).
- Keynote Speaker, Digital Human Modeling, Simulation and Analysis Workshop, US Army TACOM, Detroit, MI, November 2005.
- Keynote Speaker: TIDSE, Darmstadt, Germany, June 2004
- Keynote Speaker: Autonomous Agents, May 2001, Montreal, Canada.
- Keynote Speaker: "Learning to Behave Workshop", October 2000, U. of Twente, Enschede, Netherlands.
- Keynote Speaker: ChinaGraph 2000, September 25, 2000, Hangzhou, China.
- Keynote Speaker: Digital Human Models, June '00, Dearborn, MI.
- Keynote Speaker: Virtual Humans '98, Los Angeles, CA.
- Keynote Speaker: Pacific Graphics '97, Seoul, Korea.
- Keynote Speaker: Current Issues in the Use and Development of Anthropometric Data, June 1997, Bethesda, MD.
- Keynote Speaker: SIBGRAPI '96, Caxambu, Brazil.
- Keynote Speaker: '95 Symposium on "Human Interaction with Complex Systems," Greensboro, NC.

Collaborators and Co-Editors (only non-University of Pennsylvania affiliation; last 5 years):

Elizabeth Andre (U. Augsburg, Germany), Koji Ashida (nVidia), Ramaa Bindiganavale (Susquehanna Partners), Ingrid Carlbom (Lucent), Justine Cassell (MIT; Northwestern U), Charles Erignac (Boeing), Jonathan Gratch (ICT, USC), Hyeong-Seok Ko (Seoul National U), Ying Liu (Disney), Nadia Magnenat-Thalmann (U. Geneva), Dimitris Metaxas (Rutgers), Eric Petajan (Face2Face, Inc.), Rich Rabbitz (Lockheed-Martin), Pascale Rondot (GE Research), William Schuler (U Minnesota), Daniel Thalmann (EPFL, Switzerland), Jeff Wampler (USAF), Liwei Zhao (Susquehanna Partners)

PhD Thesis Advisor (Year):

Erdan Gu 06, Seung-Joo Lee 06, Nuria Pelechano 06, Aaron Bloomfield 04, Ying Liu 03, Koji Ashida 03, Sooha Lee 02, Suejung Huh 02, Liwei Zhao 01, Rebecca Mercuri 01, Charles Erignac 01, Jianping Shi 00, John Granieri 00, Rama Bindiganavale 00, Diane Chi 99, Sonu Chopra 99, Deepak Tolani 98, Pei-Hwa Ho 98, Bond-Jay Ting 98, Barry Reich 97, Xinmin Zhao 96, Min-Zhi Shao 96, Francisco Azuola 96, Paul Diefenbach 96, Libby Levison 96, Welton Becket 96, Hyeongseok Ko 94, Eunyoung Koh 93, Jianmin Zhao 93, Philip Lee 93, Wallace Ching 92, Moon Jung 92, Cary Phillips 91, Catherine Pelachaud 91, Tarek Alameldin 91, Diana Dadamo 90, Jugal Kalita 90, Isaac Rudomin 90, Susanna Wei 90, Pearl Pu 89, Tamar Granor 86, Paul Fishwick 86, Stephen Platt 85, Gerald Radack 84, James Korein 84, Chaim Broit 81, Dan Olsen 81, Sakunthala Gnanamgari 81, Joseph O'Rourke 80, Larry Grim 80, Bulent Ozguc 78.

Post-Graduate Scholar Sponsor:

Catherine Pelachaud, Marie-Luce Viaud, Tsukasa Noma, Torbjorn Hallgren, Ambarish Goswami, Begoña Martinez, Monica Costa, Ugur Gudukbay, Masatosi Hada, Aaron Bloomfield, Yu Zhang