

REFERENCES

- [ACP02] B. Allen, B. Curless, and Z. Popovic. Articulated body deformation from range scan data. *ACM Transactions on Graphics*, 2002.
- [AF02] O. Arikan and D. A. Forsythe. Interactive motion generation from examples. In *Proceedings of ACM SIGGRAPH*, pages 483–490, 2002.
- [AFO03] O. Arikan, D. A. Forsyth, and J. O’Brien. Motion synthesis from annotations. In *Proceedings of ACM SIGGRAPH*, pages 402–408, 2003.
- [AGH03] N. Al-Ghreibil and J. Hahn. Combined partial motion clips. In *The 11th International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision*. Eurographics, February 2003.
- [Ame04] *The American Heritage Dictionary of the English Language*. Houghton Mifflin Company, fourth edition, 2004.
- [AW00] G. Ashraf and K. C. Wong. Generating consistent motion transition via decoupled framespace interpolation. *Computer Graphics Forum*, 2000.
- [BB98] R. Bindiganavale and N. I. Badler. Motion abstraction and mapping with spatial constraints. In *Proceedings of CAPTECH*, 1998.
- [BBK01] C. Böhm, S. Berchtold, and D. A. Keim. Searching in high-dimensional spaces: Index structures for improving the performance of multimedia databases. *ACM Computing Surveys*, pages 322–373, 2001.
- [BBM⁺01] C. Buehler, M. Bosse, L. McMillan, S. Gortler, and M. Cohen. Unstructured lumigraph rendering. In *Proceedings of ACM SIGGRAPH*, pages 425–432, 2001.
- [BC89] A. Bruderlin and T. Calvert. Goal-directed dynamic animation of human walking. In *Proceedings of ACM SIGGRAPH*, pages 233–242, 1989.
- [BC96] A. Bruderlin and T. Calvert. Knowledge-driven, interactive animation of human running. In *Proceedings of Graphics Interface*, pages 213–221, 1996.
- [Bel57] R. E. Bellman. *Dynamic Programming*. Princeton University Press, 1957.

- [BH00] M. Brand and A. Hertzmann. Style machines. In *Proceedings of ACM SIGGRAPH*, 2000.
- [Bod00] P. Bodik. Automatic footplant detection: inside flmview. As Summer Project Web Page: <http://www.cs.wisc.edu/graphics/Gallery/PeterBodik/>, 2000.
- [Bow00] R. Bowden. Learning statistical models of human motion. In *Proceedings of IEEE CVPR*, 2000.
- [BRRP97] B. Bodenheimer, C. Rose, S. Rosenthal, and J. Pella. The process of motion capture: Dealing with the data. *Computer Animation and Simulation*, 1997.
- [BW95] A. Bruderlin and L. Williams. Motion signal processing. In *Proceedings of ACM SIGGRAPH*, pages 97–104, August 1995.
- [CHP07] S. Cooper, A. Hertzmann, and Z. Popovic. Active learning for real-time motion controllers. In *Proceedings of ACM SIGGRAPH*, 2007.
- [CLS03] M. G. Choi, J. Lee, and S. Y. Shin. Planning biped locomotion using motion capture data and probabilistic roadmaps. *ACM Transactions on Graphics*, 22(2):182–203, 2003.
- [DYP03] M. Dontcheva, G. Yngve, and Z. Popovic. Layered acting for character animation. In *Proceedings of ACM SIGGRAPH*, July 2003.
- [FS00] E. G. Freedman and D. L. Sparks. Coordination of the eyes and head: movement kinematics. *Experimental Brain Research*, 2000.
- [FvdPT01a] P. Faloutsos, M. van de Panne, and D. Terzopoulos. Composable controllers for physics-based character animation. In *Proceedings of ACM SIGGRAPH*, page 251260, 2001.
- [FvdPT01b] P. Faloutsos, M. van de Panne, and D. Terzopoulos. The virtual stuntman: Dynamic characters with a repertoire of autonomous motor skills. *Computers and Graphics*, pages 933–953, 2001.
- [GJH01] A. Galata, N. Johnson, and D. Hogg. Learning variable length markov models of behaviour. *Computer Vision and Image Understanding*, 2001.
- [Gle98] M. Gleicher. Retargetting motion to new characters. In *Proceedings of ACM SIGGRAPH*, 1998.
- [Gle01] M. Gleicher. Motion path editing. In *Proceedings of ACM SIGGRAPH Symposium on Interactive 3D Graphics*, 2001.
- [GMHP04] K. Grochow, S. Martin, A. Hertzmann, and Z. Popovic. Style-based inverse kinematics. In *Proceedings of ACM SIGGRAPH*, 2004.

- [Gra98] F. S. Grassia. Practical parameterization of rotations using the exponential map. *Journal of Graphics Tools*, 3(3):29–48, 1998.
- [GSKJ03] M. Gleicher, H. J. Shin, L. Kovar, and A. Jepsen. Snap-together motion: Assembling run-time animation. In *Proceedings of ACM SIGGRAPH Symposium on Interactive 3D Graphics*, April 2003.
- [GV87] D. Guitton and M. Volle. Gaze control in humans: eye-based coordination during orienting movements to targets within and beyond the oculomotor range. *Journal of Neurophysiology*, 1987.
- [HGP04] E. Hsu, S. Gentry, and J. Popovic. Example-based control of human motion. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, 2004.
- [Hor87] B. K. P. Horn. Closed-form solution of absolute orientation using unit quaternions. *Journal of the Optical Society of America A*, 4:629–642, 1987.
- [HP97] J. Hodgins and N. Pollard. Adapting simulated behaviors for new characters. In *Proceedings of ACM SIGGRAPH*, page 153162, 1997.
- [HPP05] E. Hsu, K. Pulli, and J. Popovic. Style translation for human motion. In *Proceedings of ACM SIGGRAPH*, pages 1082–1089, July 2005.
- [HRvdP04] J. Harrison, R. Rensink, and M. van de Panne. Obscuring length changes during animated motion. In *In Proceedings of ACM SIGGRAPH*, 2004.
- [HW98] J. K. Hodgins and W. L. Wooten. Animating human athletes. *Proceedings of Robotics Research: The Eighth International Symposium*, pages 356–367, 1998.
- [HWBO95] J. Hodgins, W. Wooten, D. Brogan, and J. O’Brien. Animating human athletics. In *Proceedings of ACM SIGGRAPH*, pages 71–78, August 1995.
- [HWG07] R. Heck, M. Wallick, and M. Gleicher. Virtual videography. *ACM Transactions on Multimedia Computing, Communications, and Applications (TOMCAPP)*, 2007.
- [IAF06] L. Ikemoto, O. Arikan, and D. Forsyth. Knowing when to put your foot down. In *Proceedings of ACM SIGGRAPH Symposium on Interactive 3D Graphics*, 2006.
- [IAF07] L. Ikemoto, O. Arikan, and D. Forsyth. Quick transitions with cached multi-way blends. In *Proceedings of the Symposium on Interactive 3D Graphics and Games*, 2007.
- [IF04] L. Ikemoto and D. A. Forsyth. Enriching a motion collection by transplanting limbs. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, August 2004.

- [JT81] O. Johnston and F. Thomas. *Disney Animation: The Illusion of Life*. Abbeville Press, 1981.
- [KB96] H. Ko and N. Badler. Animating human locomotion with inverse dynamics. *IEEE Computer Graphics and Application*, 16(2):58–59, 1996.
- [KG03] L. Kovar and M. Gleicher. Flexible automatic motion blending with registration curves. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, July 2003.
- [KG04] L. Kovar and M. Gleicher. Automated extraction and parameterization of motions in large data sets. In *Proceedings of ACM SIGGRAPH*, pages 559–568, 2004.
- [KGM07] K. Han Kim, R. Brent Gillespie, and Bernard J. Martin. Head movement control in visually guided tasks: Postural goal and optimality. *Computers in Biology and Medicine*, pages 1009–1019, 2007.
- [KGP02] L. Kovar, M. Gleicher, and F. Pighin. Motion graphs. In *Proceedings of ACM SIGGRAPH*, 2002.
- [Kov04] L. Kovar. Automated methods for data-driven synthesis of realistic and controllable human motion. University of Wisconsin-Madison, Ph.D. Thesis, 2004.
- [KP06] P. G. Kry and D. K. Pai. Interaction capture and synthesis. In *Proceedings of ACM SIGGRAPH*, 2006.
- [KPS03] T. Kim, S. Park, and S. Shin. Rhythmic-motion synthesis based on motion-beat analysis. In *Proceedings of ACM SIGGRAPH*, pages 392–401, 2003.
- [KS05] T. Kwon and S. Y. Shin. Motion modeling for on-line locomotion synthesis. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, July 2005.
- [KSG02] L. Kovar, J. Schreiner, and M. Gleicher. Footskate cleanup for motion capture editing. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, 2002.
- [LBB02] S. P. Lee, J. B. Badler, and N. I. Badler. Eyes alive. In *Proceedings of ACM SIGGRAPH*, 2002.
- [LCL06] K. H. Lee, M. G. Choi, and J. Lee. Motion patches: Building blocks for virtual environments annotated with motion data. In *Proceedings of ACM SIGGRAPH*, 2006.
- [LCR⁺02] J. Lee, J. Chai, P. Reitsma, J. Hodgins, and N. Pollard. Interactive control of avatars animated with human motion data. In *Proceedings of ACM SIGGRAPH*, pages 491–500, 2002.

- [LK06] M. Lau and J. Kuffner. Precomputed search trees: Planning for interactive goal-driven animation. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, 2006.
- [LL04] J. Lee and K. H. Lee. Precomputing avatar behavior from human motion data. In *Proceedings of the ACM SIGGRAPH/Eurographics Symposium on Computer animation*, pages 79–87, 2004.
- [LP02] C. K. Liu and Z. Popovic. Synthesis of complex dynamic character motion from simple animations. *ACM Transactions on Graphics*, page 408416, 2002.
- [LS99] J. Lee and S. Y. Shin. A hierarchical approach to interactive motion editing for human-like figures. In *Proceedings of ACM SIGGRAPH*, 1999.
- [LvdP96] A. Lamouret and M. van de Panne. Motion synthesis by example. In *Proceedings of the Eurographics workshop on Computer animation and simulation*, pages 199–212, 1996.
- [LvdPF96] J. Laszlo, M. van de Panne, and E. Fiume. Limit cycle control and its application to the animation of balancing and walking. In *Proceedings of ACM SIGGRAPH*, pages 155–162, 1996.
- [LWS02] Y. Li, T. Wang, and H. Y. Shum. Motion texture: A two-level statistical model for character motion synthesis. In *Proceedings of ACM SIGGRAPH*, 2002.
- [LZWP03] F. Liu, Y. Zhuang, F. Wu, and Y. Pan. 3d motion retrieval with motion index tree. *Computer Vision and Image Understanding*, pages 265–284, 2003.
- [Mac90] A. A. Maciejewski. Dealing with the ill-conditioned equations of motion for articulated figures. *IEEE Computer Graphics and Applications*, 1990.
- [MBBT00] J. S. Monzani, P. Baerlocher, R. Boulic, and D. Thalmann. Using an intermediate skeleton and inverse kinematics for motion retargeting. In *Proceedings of Eurographics*, 2000.
- [MBC01] M. Mizuguchi, J. Buchanan, and T. Calvert. Data driven motion transitions. In *Eurographics Short Presentations*, September 2001.
- [MC07] M. K. McCluskey¹ and K. E. Cullen. Eye, head, and body coordination during large gaze shifts in rhesus monkeys: Movement kinematics and the influence of posture. *Journal of Neurophysiology*, 2007.
- [Men00] A. Menache. *Understanding Motion Capture for Computer Animation and Video Games*. Academic Press, 2000.

- [MFCD99] F. Multon, L. France, M.-P. Cani, and G. Debunne. Computer animation of human walking: a survey. *The Journal of Visualization and Computer Animation*, 10:39–54, 1999.
- [MK05] T. Mukai and S. Kuriyama. Geostatistical motion interpolation. In *Proceedings of ACM SIGGRAPH*, 2005.
- [MP07] J. McCann and N. S. Pollard. Responsive characters from motion fragments. In *Proceedings of ACM SIGGRAPH*, 2007.
- [MZF06] A. Majkowska, V. Zordan, and P. Faloutsos. Automatic splicing for hand and body animations. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, 2006.
- [MZH⁺07] R. A. Metoyer, V. B. Zordan, B. Hermens, C. C. Wu, and M. Soriano. Psychologically inspired anticipation and dynamic response for impacts to the head and upper body. *Transactions on Visualization and Computer Graphics*, 2007.
- [NF02] M. Neff and E. Fiume. Modeling tension and relaxation for computer animation. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, page 8188, 2002.
- [OBBH00] J. F. O’Brien, B. Bodenheimer, G. Brostow, and J. K. Hodgins. Automatic joint parameter estimation from magnetic motion capture data. In *Proceedings of Graphics Interface*, 2000.
- [PB00] K. Pullen and C. Bregler. Animating by multi-level sampling. In *Proceedings of IEEE Computer Animation Conference*, pages 36–42. CGS and IEEE, May 2000.
- [PB02] K. Pullen and C. Bregler. Motion capture assisted animation: Texturing and synthesis. In *Proceedings of ACM SIGGRAPH*, July 2002.
- [Per95] K. Perlin. Real time responsive animation with personality. *IEEE Transactions on Visualization and Computer Graphics*, 1(1):5–15, March 1995.
- [PG96] K. Perlin and A. Goldberg. Improv: A system for scripting interactive actors in virtual worlds. In *Proceedings of ACM SIGGRAPH*, August 1996.
- [PL06] J. Pettre and J. P. Laumond. A motion capture-based control-space approach for walking mannequins: Research articles. *Computer Animation and Virtual Worlds*, pages 109–126, 2006.
- [PSS02] S. I. Park, H. J. Shin, and S. Y. Shin. On-line locomotion generation based on motion blending. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, July 2002.

- [PZ05] N. Pollard and V. Zordan. Physically based grasping control from example. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, 2005.
- [RCB98] C. Rose, M. Cohen, and B. Bodenheimer. Verbs and adverbs: multidimensional motion interpolation. *IEEE Computer Graphics and Applications*, 18(5), 1998.
- [RGBC96] C. Rose, B. Guenter, B. Bodenheimer, and M. Cohen. Efficient generation of motion transitions using spacetime constraints. In *Proceedings of ACM SIGGRAPH*, pages 147–154, August 1996.
- [RP04] P. S. A. Reitsma and N. S. Pollard. Evaluating motion graphs for character navigation. In *Proceedings of the ACM SIGGRAPH/Eurographics Symposium on Computer animation*, pages 89–98, 2004.
- [RP07] P. Reitsma and N. Pollard. Evaluating motion graphs for character animation. *ACM Transactions on Graphics*, 2007.
- [RSC01] C. Rose, P. Sloan, and M. Cohen. Artist-directed inverse-kinematics using radial basis function interpolation. *Computer Graphics Forum*, 20(3), 2001.
- [SDO⁺04] M. Stone, D. DeCarlo, I. Oh, C. Rodriguez, A. Stere, A. W. Lees, and C. Bregler. Speaking with hands: Creating animated conversational characters from recordings of human performance. In *Proceedings of ACM SIGGRAPH*, 2004.
- [SH05] A. Safonova and J. Hodgins. Analyzing the physical correctness of interpolated human motion. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, 2005.
- [SH07] A. Safonova and J. K. Hodgins. Construction and optimal search of interpolated motion graphs. In *Proceedings of ACM SIGGRAPH*, 2007.
- [Sho85] K. Shoemake. Animating rotation with quaternion curves. In *Proceedings of ACM SIGGRAPH*, pages 245–254, July 1985.
- [SKF07] A. Shapiro, M. Kallmann, and P. Faloutsos. Interactive motion correction and object manipulation. In *Proceedings of the Symposium on Interactive 3D Graphics and Games*, 2007.
- [SKG03] H. SHIN, L. KOVAR, and M. GLEICHER. Physical touch-up of human motions. In *Proceedings of Pacific Graphics*, October 2003.
- [SKG05] M. Sung, L. Kovar, and M. Gleicher. Fast and accurate goal-directed motion synthesis for crowds. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, 2005.

- [SLGS01] H.-J. Shin, J. Lee, M. Gleicher, and S.-Y. Shin. Computer puppetry: an importance-based approach. *ACM Transactions on Graphics*, 20(2):67–94, April 2001.
- [SM01] H. Sun and D. Metaxas. Automating gait animation. In *Proceedings of ACM SIGGRAPH*, 2001.
- [SMM05] M. Srinivasan, R. A. Metoyer, and E. N. Mortensen. Controllable character animation using mobility maps. *Graphics Interface*, 2005.
- [SNI06] T. Shiratori, A. Nakazawa, and K. Ikeuchi. Dancing-to-music character animation. In *Proceedings of Eurographics*, 2006.
- [SO06] H. J. Shin and H. S. Oh. Fat graphs: Constructing an interactive character with continuous controls. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, 2006.
- [SSSE00] A. Schödl, R. Szeliski, D. H. Salesin, and I. Essa. Video textures. In *Proceedings of ACM SIGGRAPH*, pages 489–498, 2000.
- [TH00] L. M. Tanco and A. Hilton. Realistic synthesis of novel human movements from a database of motion capture examples. In *Proceedings of IEEE Workshop on Human Motion*, 2000.
- [TLP07] A. Treuille, Y. Lee, and Z. Popovic. Near-optimal character animation with continuous control. In *Proceedings of ACM SIGGRAPH*, 2007.
- [TM04] S. C. L. Terra and R. A. Metoyer. Performance timing for keyframe animation. In *Proceedings of the ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, pages 253–258, 2004.
- [TSK02] S. TAK, O. SONG, and H. KO. Spacetime sweeping: An interactive dynamic constraints solver. *Computer Animation*, pages 261–270, June 2002.
- [WB03] J. Wang and B. Bodenheimer. An evaluation of a cost metric for selecting transitions between motion segments. In *Proceedings of ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, 2003.
- [WDAC06] J. Wang, S. M. Drucker, M. Agrawala, and M. F. Cohen. The cartoon animation filter. In *Proceedings of ACM SIGGRAPH*, pages 1169–1173, 2006.
- [WH97] D. Wiley and J. Hahn. Interpolation synthesis of articulated figure motion. *IEEE Computer Graphics and Applications*, 17(6), 1997.
- [WH00] W. Wooten and J. Hodgins. Simulation of leaping, tumbling, landing, and balancing humans. In *Proceedings of IEEE International Conference on Robotics and Animation*, 2000.

- [WP95] A. Witkin and Z. Popovic. Motion warping. In *Proceedings of ACM SIGGRAPH*, 1995.
- [YKH04] K. Yamane, J. Kuffner, and J. Hodgins. Synthesizing animations of human manipulation tasks. In *Proceedings of ACM SIGGRAPH*, 2004.
- [YLvdP07] K. Yin, K. Loken, and M. van de Panne. Simbicon: Simple biped locomotion control. In *Proceedings of ACM SIGGRAPH*, 2007.
- [ZH03] V. B. Zordan and N. C. Van Der Horst. Mapping optical motion capture data to skeletal motion using a physical model. In *Proceedings of the ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, pages 245–250, 2003.