

References

- Agarwal, M. (1997). A systematic classification of neural-network-based control. *IEEE Control Systems Magazine*, 17(2), 75–93.
- Alexander, R. M. (1988). *Elastic mechanisms in animal movement*. Cambridge University Press, Cambridge.
- Alexander, R. M. (1992). A model of bipedal locomotion on compliant legs. *Phil. Trans. Roy. Soc., B* 338, 189–198.
- Allard, F., Graham, S., & Paarsalu, M. (1980). Perception in sport: Basketball. *Journal of Sport Psychology*, 2, 14–21.
- Astrom, K. J. (1965). Optimal control of Markov decision processes with incomplete state estimation. *J. Math. Anal. Applic.*, 10, 174–205.
- Athans, M., & Falb, P. L. (1966). *Optimal control: An introduction to the theory and its applications*. McGraw-Hill, New York.
- Bellman, R. E. (1957). *Dynamic Programming*. Princeton University Press, Princeton, New Jersey.
- Berns, G. S., & Sejnowski, T. J. (1996). How the basal ganglia make decisions. In Damasio, A. (Ed.), *Neurobiology of Decision-Making*, pp. 101–113. ??, ??
- Bernstein, N. (1967). *The coordination and regulation of movements*. Pergamon, Oxford.
- Berthier, N. E., Singh, S. P., Barto, A. G., & Houk, J. C. (1993). Distributed representation of limb motor programs in arrays of adjustable pattern generators. *Journal of Cognitive Neuroscience*, 5(1), 56–78.
- Bertsekas, D. C., & Tsitsiklis, J. N. (1996). *Neuro-dynamic programming*. Athena Scientific, Belmont, Mass.
- Binder, J., Koller, D., Russell, S., & Kanazawa, K. (1997). Adaptive probabilistic networks with hidden variables. *Machine Learning*, 29, 213–244.
- Blickhan, R. (1989). The spring-mass model for running and hopping. *J. Biomechanics*, 22, 1217–1227.
- Blickhan, R., & Full, R. (1993). Similarity in multilegged locomotion: bouncing like a monopode. *J. Comp. Physiol., A* 173, 509–517.
- Bradtke, S. J., & Duff, M. O. (1995). Reinforcement learning methods for continuous-time markov decision problems. In Tesauro, G., Touretzky, D., & Leen, T. (Eds.), *Advances in Neural Information Processing Systems*, Vol. 8, pp. 393–400 Denver, CO. MIT Press.
- Brooks, R. A. (1986). A robust layered control system for a mobile robot. *IEEE Journal of Robotics and Automation*, 2, 14–23.
- Brown, I. E., & Loeb, G. E. (1998). A reductionist approach to creating and using neuromusculoskeletal models. In Winters, J. M., & E., C. P. (Eds.), *Biomechanics and Neural Control of Movement*. In press.
- Casey, T. M. (1981). A comparison of mechanical and energetic estimate of flight cost for hovering sphinx moths.. *J. Exp. Biol.*, 91.
- Chan, W. P., & Dickinson, M. H. (1996a). In vivo length oscillations of indirect flight muscles in the fruit fly *Drosophila virilis*. *J. Exp. Biol.*, 199, 2767–2774.
- Chan, W. P., & Dickinson, M. H. (1996b). Position-specific central projections of mechanosensory neurons on the haltere of the blow fly, *Calliphora vicina*. *J. Comp. Neurol.*, 369, 405–418.
- Chan, W. P., Prete, F., & Dickinson, M. H. (1998). Visual input to the efferent control system of a fly's 'gyroscope'. *Science*, 289, 289–292.
- Cohen, P., Morgan, J., & Pollack, M. (1990). *Intentions in Communication*. MIT Press.

- Cohen, A. and Ivry, R. I., & Keele, S. W. (1990). Attention and structure in sequence learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *16*, 17–30.
- Crawford, L. S., & Sastry, S. S. (1995). Biological motor approaches for a planar diver. In *Proceedings of the 34th IEEE Conference on Decision and Control*, pp. 3881–3886.
- Crawford, L. S., & Sastry, S. S. (1996). Learning controllers for complex behavioral systems. ERL memo UCB/ERL M96/73, University of California at Berkeley. Department of Electrical Engineering and Computer Sciences.
- Darling, W., & Stephenson, M. (1993). Directional effects on variability of upper limb movements. In Newell, K. M., & Corcos, D. M. (Eds.), *Variability and Motor Control*, pp. 65–88. Human Kinetics, Champaign, IL.
- Dayan, P., & Hinton, G. E. (1993). Feudal reinforcement learning. In Hanson, S. J., Cowan, J. D., & Giles, C. L. (Eds.), *Neural Information Processing Systems 5*, pp. 361–368 San Mateo, California. Morgan Kaufmann.
- Dickinson, M. H. (1996). Unsteady mechanisms of force generation in aquatic and aerial locomotion. *Amer. Zool.*, *36*, 537–554.
- Dickinson, M. H., & Götz, K. G. (1996). The wake dynamics and flight forces of the fruit fly, *Drosophila melanogaster*. *J. Exp. Biol.*, *199*, 2085–2104.
- Dickinson, M. H., Hyatt, C. J., Lehmann, F.-O., et al. (1997). Phosphorylation-dependent power output of transgenic flies: an integrated study. *Biophys. J.*, *73*, 3122–3134.
- Dickinson, M. H., & Lighton, J. R. B. (1995). Muscle efficiency and elastic storage in the flight motor of *Drosophila*. *Science*, *128*, 87–89.
- Dickinson, M. H., & Tu, M. S. (1997). The function of Dipteran flight muscle.. *Comp. Biochem. Physiol. A*, *116A*, 223–238.
- Dietterich, T. G. (1997). Machine-learning research: Four current directions. *AI Magazine*, *18*(4), 97–136.
- Doya, K., & Sejnowski, T. (1995). A novel reinforcement model of birdsong vocalization learning. In Tesauro, G., Touretzky, D., & Leen, T. (Eds.), *Advances in Neural Information Processing Systems*, Vol. 8, pp. 101–8 Denver, CO. MIT Press.
- Ellington, C. P. (1985). Power and efficiency of insect flight muscle. *J. Exp. Biol*, *115*, 293–304.
- Ellington, C. P. (1991). Limitations on animal flight performance. *J. Exp. Biol*, *160*, 71–91.
- Ellington, C. P. (1995). Unsteady aerodynamics of insect flight. In Ellington, C. P., & Pedley, T. J. (Eds.), *Biological Fluid Dynamics*. Company of Biologists, London.
- Ellington, C. P., v. d. Berg, C., Willmott, A. P., & Thomas, A. L. R. (1996). Leading-edge vortices in insect flight. *Nature*, *384*(6610), 626–30.
- Ericsson, K., Krampe, R., & Tesch-Roemer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, *100*, 363–406.
- Farley, C. T., & Taylor, C. R. (1991). A mechanical trigger for the trot–gallop transition in horses. *Science*, *253*(5017), 306–308.
- Farley, C., & Gonzalez, O. (1996). Leg stiffness and stride frequency in human running. *J. Biomech.*, *29*, 181–186.
- Farley, C., McMahon, T., & Glasheen, J. (1993). Running springs: speed and animal size. *J. exp. Biol.*, *185*, 71–86.
- Fayyazuddin, A., & Dickinson, M. H. (1996). Haltere afferents provide direct, electrotonic input to a steering motor neuron of the blowfly, *Calliphora*. *J. Neurosci.*, *16*, 5225–5232.
- Ferris, D., Louie, M., & Farley, C. (1998). Running in the real world: Adjusting leg stiffness for different surfaces. Submitted to Proceedings of the Royal Society: Biological Sciences.

- Franz, E., Eliassen, J., Ivry, R., & Gazzaniga, M. (1996). Dissociation of spatial and temporal coupling in bimanual movements of callosotomy patients. *Psychological Science*, 7, 306–310.
- Friedman, N., Murphy, K., & Russell, S. (1998). Learning the structure of dynamic probabilistic networks. In *Uncertainty in Artificial Intelligence: Proceedings of the Fourteenth Conference* Madison, Wisconsin. Morgan Kaufmann.
- Gorinevsky, D., Kapitanovsky, A., & Goldenberg, A. (1996). Radial basis function network architecture for nonholonomic motion planning and control of free-flying manipulators. *IEEE Transactions on Robotics and Automation*, 12(3).
- Gottlieb, G. L., Corcos, D. M., & Agarwal, G. C. (1989). Strategies for the control of voluntary movements with one mechanical degree of freedom. *Behavioral and Brain Sciences*, 12, 189–210.
- He, J., McMahon, T. A., & Kram, R. (1991). Mechanics of running under simulated reduced gravity. *J. Appl. Physiol.*, 71, 863–870.
- Helmuth, L., & Ivry, R. (1996). When two hands are better than one: Reduced timing variability during bimanual movements. *Journal of Experimental Psychology: Human Perception and Performance*, 22, 278–293.
- Hore, J., Watts, S., Tweed, D., & Miller, B. (1996). Overarm throws with the nondominant arm: Kinematics of accuracy. *Journal of Neurophysiology*, 76, 3693–3704.
- Hoyt, D., & Taylor, C. (1981). Gait and the energetics of locomotion in horses. *Nature*, 292, 239–240.
- Ivry, R. (1997). Cerebellar timing systems. *International Review of Neurobiology*, 41, 555–573.
- Ivry, R., Franz, E., Kingstone, A., & Johnston, J. (1998). The prp effect following callosotomy: Uncoupling of lateralized response codes. *Journal of Experimental Psychology: Human Perception and Performance*, 24, 463–480.
- Kaelbling, L. P., Littman, M. L., & Moore, A. W. (1996). Reinforcement learning: A survey. *Journal of Artificial Intelligence Research*, 4, 237–285.
- Kearns, M., Schapire, R., & Sellie, L. (1992). Toward efficient agnostic learning. In *Proceedings of the Fifth Annual ACM Workshop on Computational Learning Theory (COLT-92)* Pittsburgh, Pennsylvania. ACM Press.
- Kearns, M. J., & Vazirani, U. V. (1994). *An Introduction to Computational Learning Theory*. MIT Press, Cambridge, Massachusetts.
- Keeney, R. L., & Raiffa, H. (1976). *Decisions with Multiple Objectives: Preferences and Value Tradeoffs*. Wiley, New York.
- Kernodle, M., & Carlton, L. (1992). Information feedback and the learning of multiple-degree-of-freedom activities. *Journal of Motor Behavior*, 24, 187–196.
- Knox, S., & de Chernatony, L. (1989). The application of multiattribute modelling techniques to the mineral water market. *Quarterly Review of Marketing*, 14(4), 14–20.
- Krebs, J., Kacelnik, A., & Taylor, P. (1978). Test of optimal sampling by foraging great tits. *Nature*, 275(5675), 27–31.
- Logan, G. (1982). On the ability to inhibit complex movements: A stop-signal study of typewriting. *Journal of Experimental Psychology: Human Perception and Performance*, 3, 778–792.
- Losos, J. B., & Mikels, D. B. (1995). Adaptation, constraint, and the comparative method: phylogenetic issues and methods. In Wainwright, P. C., & Reilly, S. M. (Eds.), *Ecological Morphology*, pp. 60–98. University of Chicago Press, Chicago.
- MacKay, D. G. (1987). *The Organization of Perception and Action*. Springer-Verlag, New York.
- McMahon, T. (1990). Spring-like properties of muscles and reflexes in running. In Winters, J., & y Woo, S. (Eds.), *Multiple Muscle Systems*, pp. 578–590 New York. Springer.

- McMahon, T., & Cheng, G. (1990). The mechanics of running: how does stiffness couple with speed?. *J. Biomechanics*, 23 (suppl. 1), 65–78.
- Montague, P. R., Dayan, P., Person, C., & Sejnowski, T. J. (1995). Bee foraging in uncertain environments using predictive hebbian learning. *Nature*, 377, 725–728.
- Mount, J. (1996). Effect of practice of a throwing skill in one body position on performance of the skill in an alternate position. *Perceptual and Motor Skills*, 83, 723–732.
- Nalbach, G. (1993). The halteres of the blowfly *Calliphora I.* kinematics and dynamics.. *kinematics and dynamics. J. Comp. Physiol.*, 173, 293–300.
- Neal, R., Snyder, C., & Kroonenberg, P. (1991). Individual differences and segment interactions in throwing. *Human Movement Science*, 10, 653–676.
- Nevistic, V., & Morari, M. (1996). Constrained control of nonlinear systems: model predictive control based methods. *Automatica*, 37(3-4), 105–9.
- Papavassiliou, V., & Russell, S. (1998). Convergence of a new algorithm for reinforcement learning with general function approximators. submitted to NIPS-98.
- Parr, R., & Russell, S. (1995). Approximating optimal policies for partially observable stochastic domains. In *Proceedings of the Fourteenth International Joint Conference on Artificial Intelligence (IJCAI-95)* Montreal, Canada. Morgan Kaufmann.
- Parr, R., & Russell, S. (1998). Reinforcement learning with hierarchies of machines. In Kearns, M. (Ed.), *Advances in Neural Information Processing Systems 10*. MIT Press, Cambridge, Massachusetts.
- Pashler, H. (1998). *The Psychology of Attention*. MIT Press, Cambridge, MA.
- Pomerleau, D. A. (1993). *Neural Network Perception for Mobile Robot Guidance*. Kluwer, Dordrecht, The Netherlands.
- Russell, S. J., & Norvig, P. (1995). *Artificial Intelligence: A Modern Approach*. Prentice-Hall, Englewood Cliffs, New Jersey.
- Rust, J. (1994). Do people behave according to bellman’s principal of optimality?. Submitted to *Journal of Economic Perspectives*.
- Sargent, T. J. (1978). Estimation of dynamic labor demand schedules under rational expectations. *Journal of Political Economy*, 86(6), 1009–1044.
- Sastry, S., & Bodson, M. (1989). *Adaptive Control: Stability, Convergence, and Robustness*. Prentice Hall, Englewood Cliffs, NJ.
- Schmajuk, N. A., & Zanutto, B. S. (1997). Escape, avoidance, and imitation: a neural network approach. *Adaptive Behavior*, 6(1), 63–129.
- Strausfeld, N. J., & Lee, J.-K. (1991). Neuronal basis for parallel visual processing in the fly. *Visual Neuroscience*, 7, 13–33.
- Sutton, R. S. (1988). Learning to predict by the methods of temporal differences. *Machine Learning*, 3, 9–44.
- Thompson, C., & Raibert, M. (1989). Passive dynamic running. In Hayward, V., & Khatib, O. (Eds.), *International Symposium of Experimental Robotics*, pp. 74–83 New York. Springer-Verlag.
- Ting, L., Blickhan, R., & Full, R. (1994). Dynamic and static stability in hexapedal runners. *J. Exp Biol.*, 197, 251–269.
- Tomlin, C. J., Lygeros, J., & Sastry, S. (1998). Synthesis of safe controller for hybrid systems. In *Hybrid Systems: Computation and Control*. Springer Verlag.
- Touretzky, D. S., & Saksida, L. M. (1997). Operant conditioning in Skinnerbots. *Adaptive Behavior*, 5(3–4), 219–47.

- Tsitsiklis, J. N., & Van Roy, B. (1996). An analysis of temporal-difference learning with function approximation. Technical report LIDS-P-2322, Laboratory for Information and Decision Systems, Massachusetts Institute of Technology.
- Tu, M. S., & Dickinson, M. H. (1996). The control of wing kinematics by two steering muscles of the blowfly, *Calliphora vicina*. *J. Comp. Physiol.*, *178*, 813–830.
- Tu, M. S., & Dickinson, M. H. (1994). Modulation of negative work output from a steering muscle of the blowfly *Calliphora vicina*. *J. Exp. Biol.*, *192*, 207–224.
- Watkins, C. J. (1989). *Models of Delayed Reinforcement Learning*. Ph.D. thesis, Psychology Department, Cambridge University, Cambridge, United Kingdom.
- Winter, D. A. (1995). Human movement: A system-level approach. In Arbib, M. A. (Ed.), *The Handbook of Brain Theory and Neural Networks*. MIT Press, Cambridge, MA.
- Wright, C. (1990). Generalized motor programs: Reevaluating claims of effector independence.. In Jeannerod, M. (Ed.), *Attention and Performance XIII: Motor Representation and Control*, pp. 294–320. Lawrence Erlbaum, Hillsdale, NJ.
- Yeh, R., Kruglick, E. J., & Pister, K. S. (1996). Surface micromachined components for articulated microrobots. *IEEE/ASME J. MEMS*, *5*(1), 10–17.