

Bibliography

- Abu-Mustafa, Y., and St. Jacques, J. 1989. "Information Capacity of the Hopfield Model," *IEEE Transactions on Information Theory* **31**(4), 461–464, July.
- Albus, J. S. 1971. A theory of cerebellar function. *Mathematical Bioscience* **10**, 25–61.
- Alexander, G. E., Crutcher, M. R., and DeLong, M. R. 1990. "Basal ganglia-thalamo-cortical circuits: Parallel substrates for motor, oculomotor, "prefrontal" and "limbic" functions." *Prog. Brain Res.* **85**, 119–146.
- Alexander G. E., DeLong, M. R., Strick, P. L. 1986. Parallel Organization of Functionally Segregated Circuits Linking Basal Ganglia and Cortex. *Ann. Rev. Neurosci.* **9**, 357–381.
- Alexander, G. E., and Fuster, J. M. 1973. Effects of cooling prefrontal cortex on cell firing in the nucleus medialis dorsalis. *Brain Res.* **61**, 93–105
- Amari, S. 1977. Dynamics of pattern formation in lateral-inhibition type neural fields. *Biol. Cybern.* **27**, 77–87.
- Amari, S., and Arbib, M. A. 1977. Competition and cooperation in neural nets. In *Systems Neuroscience*, ed. J. Metzler, pp. 119–165, Academic Press.
- Andrade, M. A., and Morán, F. 1996. Structural study of the development of ocularity domains using a neural network model. *Biol. Cybern.* **74**, 243–254.
- an der Heiden, U., and Roth, G. 1987. Mathematical model and simulation of retina and tectum opticum of lower vertebrates. *Acta Biotheoretica* **36**, 179–212.
- Anderson, C. H., and Van Essen, D. C. 1987. Shifter circuits: A computational strategy for dynamic aspects of visual processing. *Proc Natl. Acad. Sci. USA* **84**, 6297–6301.
- Andrade, M. A., and Morán, F. 1997. Receptive field map development by anti-hebbian learning. *Neural Networks* **10**, 1037–1052.
- Arbib, M. A. 1987. Levels of modeling of mechanisms of visually guided behavior. *Behavioral and Brain Sciences* **10**, 407–465.
- Arbib, M. A. 1989. *The Metaphorical Brain 2, Neural Networks and Beyond*. Wiley.
- Arbib, M. A. 1990. Programs, Schemas, and Neural Networks for Control of Hand Movements: Beyond the RS Framework. In *Attention and Performance XIII. Motor Representation and Control*, ed. M. Jeannerod. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Arbib, M. A. 1992. Schema Theory. In the *Encyclopedia of Artificial Intelligence*, 2nd Edition, ed. Stuart Shapiro. **2**, 1427–1443, Wiley.
- Arbib, M. A., Schweighofer, N., and Thach, W. T. 1994. Modeling the role of cerebellum in prism adaptation. In *From Animals to Animats 3*, ed. D. Cliff, P. Husbands, J.-A. Meyer, and S. W. Wilson, pp. 44. The MIT Press.
- Bartha, G. T., and Thompson, R. F. 1995. Cerebellum and conditioning. In *The Handbook of Brain Theory and Neural Networks*, ed. M. A. Arbib, pp. 169–172. The MIT Press, Cambridge, MA.
- Barto, A. G., Sutton, R. S., and Brouwer, P. S. 1981. Associative search networks: A reinforcement learning associative memory. *Biological Cybernetics* **40**, 201–211.
- Barto, A. G., and Sutton, R. S. 1981. Landmark learning: An illustration of associative search. *Biological Cybernetics* **42**, 1–8.
- Barto, A. G., Sutton, R. S., and Anderson, C. W. 1983. Neuronlike Adaptive Elements That Can Solve Difficult Learning Control Problems. *IEEE Transactions on Systems, Man, and Cybernetics*, SMC-5, 834–46.

- Berns, G. S., and Sejnowski, T. J. 1995. A model of basal ganglia function unifying reinforcement learning and action selection. *Joint Symposium on Neural Computation*. 129–148.
- Berthoz A., and Droulez, J. 1991. The concept of Dynamic Memory in Sensorimotor Control. *Motor Control: Concepts and Issues*, ed. D. R. Humphrey and H.-J. Freund. John Wiley & Sons Ltd.
- Biederman, I. 1987. Recognition-by-components: A theory of human image understanding. *Psychological Review* **94**, 115–147.
- Biederman, I., and Gerhardstein, P. C. 1993. Recognizing depth-rotated objects: Evidence and conditions for three-dimensional viewpoint invariance. *J. Exp. Psychology* **19**, 1162–1182.
- Boussaoud, D., and Wise, S. P. 1993. “Primate frontal cortex: Effects of stimulus and movement.” *Exp. Brain Res.* **95**, 28–40.
- Booch, G., Rumbaugh, J., and Jacobson, I. 1999. *The Unified Modeling Language, User Guide*, Addison-Wesley.
- Bower, J. M., and Beeman, D. 1998. *The Book of GENESIS, Exploring Realistic Neural Models with the GEneral NEural Simulation System*, Telos, Springer-Verlag, 2nd Edition.
- Braun, D., Breitmeyer, B. G. 1988. Relationship between directed visual attention and saccadic reaction times. *Exp. Brain Res.* **73**, 546–552.
- Bruce, C. J., and Goldberg, M. E. 1984. Physiology of the frontal eye fields. *Trends Neurosci.* **7**, 436–441.
- Bruce, V., Valentine, T., and Baddeley, A. 1987. The basis of the 3/4 view advantage in face recognition. *Applied Cognitive Psychology* **1**, 109–120.
- Buhmann, J., Lades, M., and von der Malsburg, C. 1990. Size and distortion invariant object recognition by hierarchical graph matching. In *Proceedings of the IJCNN International Joint Conference on Neural Networks*, pages II 411–416, San Diego. IEEE.
- Carey, R. G. 1975. *A quantitative analysis of the distribution of the retinal elements in frogs and toads with special emphasis on the Area Retinalis*. Masters Thesis, University of Massachusetts at Amherst, Amherst Massachusetts.
- Carlson, A. 1990. Anti-Hebbian learning in a non-linear neural network. *Biol. Cybern.* **64**, 171–176.
- Carpenter G. A., and Grossberg S. 1987. A Massively Parallel Architecture for a Self-Organizing Neural Pattern Recognition Machine. *Computer Vision. Graphics and Image Processing* **37**, 54–115.
- Carpenter G. A., and Grossberg S. 1987. ART2: Self-Organization of Stable Category Recognition Codes for Analog Input Patterns. *Applied Optics* **26**, 4919–4930.
- Carpenter G. A., Grossberg S., and Mehanian S. 1989. Invariant Recognition of Cluttered Scene by a Self-Organizing ART Architecture: CORT-X Boundary Segmentation. *Neural Networks* **2**, 1169–1181.
- Carpenter G. A., and Grossberg S. 1990. ART3: Hierarchical Search Using Chemical Transmitters in Self-Organizing Pattern Recognition Architectures. *Neural Networks* **3**, 129–152.
- Carpenter G. A., Grossberg S., and Rosen D. B. 1991. Fuzzy ART: Fast Stable Learning and Categorization of Analog Patterns by an Adaptive Resonance System. *Neural Networks* **4**, 759–771.
- Cervantes-Pérez, F., Lara, R., and Arbib, M. A. 1985. Neural Model of Interactions Subservicing Prey-Predator Discrimination and Size Preference in Anuran Amphibia. *J. Theor. Biol.* **113**, 117–152

- Chevalier, G., Vacher, S., Deniau, J. M., and Desban, M. 1985. Disinhibition as a Basic Process in the Expression of Striatal Functions. I. The Striato-Nigral Influence on the Tecto-spinal/Tecto-diencephalic Neurons. *Brain Res.* **334**, 215–226
- Cobas, A., and Arbib, M. A. 1992. Prey-catching and Predator-avoidance in Frog and Toad: Defining the Schemas. *J. Theor. Biol.* **157**, 271–304.
- Collett, T. 1983. Picking a route; Do toads follow rules or make plans? In *Advances in Vertebrate Neuroethology*, ed. J. P. Ewert, R. R. Capranica, and D. J. Ingle, pp.321 – 330.
- Corbacho, F. J., and Arbib, M. A. 1995. Learning to Detour. *J. Adaptive Behavior* **3(4)**, 419–468.
- Corbacho, F., Khort, B., Lin, B., Nothis, A., and Arbib, M. A. 1996. Learning to Detour: Behavioral Experiments with Frogs. *Proceedings of the Workshop on Sensorimotor Coordination: Amphibians, Models, and Comparative Studies*. Sedona, Arizona.
- Corbacho, F. 1998. Commentary: Schema-based Learning. *Artificial Intelligence* **101**, 370–373.
- Cote, L., and Crutcher, M. D. 1991. The Basal Ganglia. Principles of Neuroal Science. New York, Elsevier.
- Crick, F. 1982. Do dendritic spines twitch? Trends in Neurobiology, February:44–46.
- Damasio, A. R., and Damasio, H. 1992. Cortical systems underlying knowledge retrieval: Evidence from human lesion studies. In *Neurobiology of Neocortex*. John Wiley.
- Dassonville, P., Schlag, J., and Schlag-Rey, M. 1990. Oculomotor Localization Relies On a Damped Representation of Saccadic Eye Displacement in Human and Nonhuman Primates. *Vis Neurosci* **9**, 261–269.
- Daugman, J. G. 1988. Complete discrete 2-D Gabor transform by neural networks for image analysis and compression. *IEEE Transactions on Acoustics, Speech and Signal Processing*, **36(7)**, 1169–1179.
- Deniau, J. M., and Chevalier, G. 1985. Disinhibition as a basic process in the expression of striatal functions. II. The striato-nigral influence on thalamocortical cells of the ventromedial thalamic nucleus. *Brain Res.* **334**, 227–233
- Dev, P. 1975. Perception of Depth Surfaces in Random-dot Stereograms: A Neural Model. *Int J. Man-Machine Studies* **7**, 511–528.
- Didday, R. L. 1976. A model of visuomotor mechanisms in the frog optic tectum, *Math. Biosci.* **30**, 169–180.
- Dominey P. F., and Arbib, M. A. 1991. Multiple Brain Regions Cooperate in Sequential Saccade Generation. In *Visual Structures and Integrated Functions*, ed. M. A. Arbib and J.-P. Ewert. Springer-Verlag pp.281–295.
- Dominey, P. F., and Arbib, M. A. 1992. “A cortico-subcortical model for generation of spatially accurate sequential saccades.” *Cerebral Cortex.* **2**, 153–175.
- Eckmiller, R. 1975. Electronic simulation of the vertebrate retina. *IEEE Transactions on Biomedical Engineering*, BME-22(4), 305–311.
- Eigen, M. 1978. The hypercycle. *Naturwissenschaften*, **65**, 7–41.
- Erwin, E., Obermayer, K., and Schulten, K. 1995. Models of orientation and ocular dominance columns in the visual cortex: a critical comparison. *Neural Computation* **7**, 425–468.
- Ewert, J. P. 1971. Single unit response of the toad’s (*Bufo americanus*) caudal thalamus to visual objects. *Z. vergl. Physiol.* **74**, 81–102.
- Ewert J.-P. 1976. The visual system of the toad: Behavioral and physiological studies on a pattern recognition system. In *The Amphibian Visual System*, ed. K. V. Fite. Academic Press : New York. pp. 142–202.
- Ewert J.-P., and Hock, F. 1972. Movement-sensitive neurons in the toad’s retina. *Experimental Brain Research* **16**, 41–59.

- Földiak, P. 1990. Forming sparse representations by local anti-Hebbian learning. *Biol. Cybern.* **64**, 165–170.
- Frégnac, Y., and Imbert, M. 1984. Development of neuronal selectivity in primary visual cortex of cat. *Physiol. Rev.* **64**, 325–434.
- Funahashi S., Bruce, C. J., and Goldman-Rakic, P. S. 1989. Mnemonic Coding of Visual Space in Monkey's Dorsolateral Prefrontal Cortex. *J Neurophysiol.* **61**, 331–349.
- Fuster, J. M., and Alexander, G. E. 1973. Firing changes in cells of the nucleus medialis dorsalis associated with Memory response behavior. *Brain Res.* **61**, 79–91.
- Gaillard, F., Arbib, M. A., Corbacho, F., and Lee, H. B. 1998. Modeling the Physiological Responses of Anuran R3 Ganglion Cells. *Vision Research* **38**, 1282–1299.
- Gerfen, C. R. 1992. “The neostriatal mosaic: Multiple levels of compartmental organization in the basal ganglia.” *Ann. Rev. Neurosci.* **15**, 285–320.
- Gilbert, P. F. C., and Thach, W. T. 1977. Purkinje cell activity during motor learning. *Brain Research* **128**, 309–328.
- Gnadt J. W., and Andersen, R. A. 1988. Memory related motor planning activity in posterior parietal cortex of macaque. *Exp Brain Res.* **70**, 216–220.
- Goldberg M. E., and Bruce, C. J. 1990. Primate Frontal Eye Fields. III. Maintenance of a Spatially Accurate Saccade Signal. *J Neurophysiol.* **64**, 489–508.
- Goldman-Rakic, P. S. 1987. Circuitry of primate prefrontal cortex and regulation of behavior by representational memory. In *Handbook of Physiology, Chap V. The Nervous System* **9**, 373–417.
- Grossberg, S. 1976. A Theory of Visual Coding, Memory, and Development: Part 1. Parallel Development and Coding of Neural Feature Detectors. *Biological Cybernetics* **23**, 121–134.
- Grüsser O.-J., and Grüsser-Cornehls, U. 1976. Neurophysiology of the anuran visual system. In *Frog Neurobiology*, ed. R. Llinás and W. Precht. Springer: New York. pp. 297–385.
- Grüsser-Cornehls, U. 1988. Neurophysiological properties of the retinal ganglion cell classes of the Cuban treefrog, *Hyla septentrionalis*. *Exp Brain Res.* **73**, 39–52.
- Häussler, A. F., and von der Malsburg, C. 1983. Development of retinotopic projections: an analytical treatment. *J. Theo. Biol.* **2**, 47–73.
- Hebb, D. O. 1949. *Organization of Behavior*. John Wiley & Sons, New York.
- Hikosaka, O. 1989. Role of Basal ganglia in Initiation of Voluntary Movement. In *Dynamic Interactions in Neural Networks: Models and Data*, ed. M. Arbib and S. Amari. Springer-Verlag, New York, pp 153–168.
- Hikosaka, O., and Wurtz, R. 1983a. Visual and Oculomotor functions of Monkey Substantia Nigra Pars Reticulata. I. Relation of visual and Auditory Responses to Saccades. *J Neurophysiol.* **49**, 1230–1253.
- Hikosaka, O., and Wurtz, R. 1983b. Visual and Oculomotor functions of Monkey Substantia Nigra Pars Reticulata. II. Visual Responses Related to Fixation of Gaze. *J Neurophysiol.* **49**, 1254–1267.
- Hikosaka, O., and Wurtz, R. 1983c. Visual and Oculomotor functions of Monkey Substantia Nigra Pars Reticulata. III. Memory-Contingent Visual and Saccade Responses. *J. Neurophysiol.* **49**, 1268–1284.
- Hikosaka, O., and Wurtz, R. 1983d. Visual and Oculomotor functions of Monkey Substantia Nigra Pars Reticulata. IV. Relation of Substantia Nigra to Superior Colliculus. *J. Neurophysiol.* **49**, 1285–1301.
- Hines, M., and Carnevale, T. 1997. The NEURON Simulation Environment, *Neural Computation* **9**, 1179–1209.
- Hinton, G. E, and Sejnowski, T. J. 1986. Learning and Relearning in Boltzmann Machines. In *Parallel Distributed Processing: Explorations in the Microstructure of*

- Cognition*, Volume 1: Foundations, ed. J. L. McClelland and D. E. Rumelhart, pp. 282–317. Bradford Book/The MIT Press.
- Hodgkin, A. L., and Huxley, A. F. 1952. A quantitative description of membrane current and its application to conduction and excitation in nerve. *Journal of Physiology* **117**, 500–544.
- Hopfield, J. 1982. “Neural Networks and Physical Systems with Emergent Collective Computational Abilities,” *Proc. of the National Academy of Sciences* **79**, 2554–2558, April.
- Hopfield, J. J., and Tank, D. W. 1985. Neural Computation of Decisions in Optimization Problems. *Biological Cybernetics* **52**, 141–152.
- House, D. 1985. Depth Perception in Frogs and Toads: A study in Neural Computing, *Lecture Notes in Biomathematics* **80**, Springer-Verlag.
- Hubel, D. H., and Wiesel, T. N. 1963. Receptive fields in cells in striate cortex of very young visually inexperienced kittens. *J. Neurophysiol.* **26**, 994–1002.
- Ilinsky, I. A., Jouandet, M. L., and Goldman-Rakic, P. S. 1985. Organization of the Nigrothalamo-cortical system in the Rhesus Monkey. *J. Comp Neurol.* **236**, 315–330.
- Ito, M. 1984. *The Cerebellum and Neural Control*. Raven Press, New York.
- Ingle, D. 1983. Brain mechanisms of visual localization by frogs and toads. *Advances in Vertebrate Neuroethology*, ed. J.-P. Ewert, R. R. Capranica, and D. J. Ingle, 177–226.
- Jones, J. P., and Palmer, L. A. 1987. An evaluation of the two dimensional Gabor filter model of simple receptive fields in cat striate cortex. *J. of Neurophysiology* **58**, 1233–1258.
- Kalocsai, P., Biederman, I., and Cooper, E. E. 1994. To what extent can the recognition of unfamiliar faces be accounted for by a representation of the direct output of simple cells. In *Proceedings of the Association for Research in Vision and Ophthalmology*, ARVO, Sarasota, Florida.
- Keating, E. G., and Gooley, S. C. 1988. Saccadic disorders caused by cooling the superior colliculus or the frontal eye fields or from combined lesions of both structures. *Brain Res.* **438**, 247–255.
- Kitai, S. T., Kocsis, J. D., Preston, R. J., and Sugimori, M. 1976. “Monosynaptic inputs to cuadate neurons identified by intracellular injection of horseradish peroxidase.” *Brain Res.* **109**, 601–606.
- Kitazawa, S., Kohno, T., and Uka, T. 1995. Effects of delayed visual information on the rate and amount of prism adaptation in the human. *The Journal of Neuroscience*, **15(11)**, 7644–7652.
- Kojima, S., and Goldman-Rakic, P. S. 1984. “Functional analysis of spatially discriminative neurons in prefrontal cortex of rhesus monkey.” *Brain Res.* **291**, 229–240.
- Konen, W., and Vorbrüggen, J. C. 1993. Applying dynamic link matching to object recognition in real world images. In *Proceedings of the International Conference on Artificial Neural Networks*, ed. S. Gielen, and B. Kappen, ICANN, pages 982–985, London. Springer-Verlag.
- König, P., and Engel, A. K. 1995. Correlated firing in sensory-motor systems. *Current Opinion in Neurobiology* **5**, 511–519.
- Lades, M. 1995. Invariant Object Recognition with Dynamical Links, Robust to Variations in Illumination. PhD thesis, Fakultät für Physik und Astronomie, Ruhr-Universität Bochum, D-44780 Bochum.
- Lades, M., Vorbrüggen, J. C., Buhmann, J., Lange, J., von der Malsburg, C., Würtz, R. P., and Konen, W. 1993. Distortion invariant object recognition in the dynamic link architecture. *IEEE Transactions on Computers* **42(3)**, 300–311.

- Lee, Y. B. 1986. *A Neural Network Model of Frog Retina: A Discrete Time-Space Approach*. Ph.D. Dissertation, Department of Computer and Information Science, University of Massachusetts at Amherst.
- Lee, H. B. 1994. *A Neural Network and Schematic modeling of anuran visuomotor coordination in Detour Behavior*. Ph. D. Thesis. University of Southern California.
- Linsker, R. 1986. From basic network principles to neural architecture. (Three papers). *Proc. Natl. Acad. Sci. USA*. **83**, 7508–7512, 8390–8394, 8779–8783.
- Linsker, R. 1990. Perceptual neural organization: Some approaches based on networks models and information theory. *Annu. Rev. Neurosci.* **13**, 257–281.
- Lynch, J. C., Graybiel, A. M., and Lobeck, L. J. 1985. The differential projection of two cytoarchitectonic subregions of the inferior parietal lobule of macaque upon the deep layers of the superior colliculus. *J. Comp. Neurol.* **235**, 241–254
- Marr, D. 1969. A theory of cerebellar cortex. *Journal of Physiology* **202**, 437–470.
- Martin, T., Keating, J., Goodkin, H., Bastian, A. J., and Thach, W. T. 1995. Throwing at visual targets: Acquisition and specificity of eye-hand coordination and its dependency on the olivocerebellar system.
- Mason, C., and Kandel, E. R. 1991. Central Visual Pathways. *Principles of Neural Science*. New York, Elsevier.
- Maturana, H. R., Lettvin, J. Y., McCulloch, W. S., and Pitts, W. H. 1960. Anatomy and physiology of vision in the frog (*Rana pipiens*). *Journal of General Physiology* **43**, (Suppl.), 129–175.
- Mays, L. E., and Sparks, D. L. 1980. Dissociation of Visual and Saccade Related Responses in Superior Colliculus Neurons. *J. Neurophysiol.* **43**, 207–232
- McCulloch, W. S., and Pitts, W. H. 1943. A Logical Calculus of the Ideas Immanent in Nervous Activity. *Bull. Math. Biophys.* **5**, 115–133.
- McEntee, W. J., Biber, M. P., Perl, D. P., and Benson, D. F. 1976. “Diencephalic amnesia: A reappraisal.” *J. Neurol. Neurosurg. Psychiatry* **39**, 436–441.
- Miller, K. J., Keller, J. B., and Stryker, M. P. 1989. Ocular dominance columnar development: Analysis and simulation. *Science* **245**, 605–615.
- Mitz, A. R., Godshalk, M., and Wise, S. P. 1991. Learning-dependent Neuronal Activity in the Premotor Cortex. *Journal of Neuroscience* **11**(6), 1855–72.
- Moore, J. W., Desmond, J. E., and Berthier, N. E. 1989. Adaptively timed conditioned responses and the cerebellum: A neural network approach. *Biological Cybernetics* **62**, 17–28.
- Munoz, D. P., and Wurtz, R. H. 1993a. “Fixation cells in monkey superior colliculus. I. Characteristics of cell discharge.” *J. Neurophysiol.* **70**, 559–570.
- Munoz, D. P., and Wurtz, R. H. 1993b. “Fixation cells in monkey superior colliculus. II. Reversible activation and deactivation.” *J. Neurophysiol.* **70**, 576–589.
- Munoz, D. P., and Wurtz, R. H. 1993c. “Interactions between fixation and saccade neurons in primate superior colliculus.” *Soc. Neurosci. Abstr.* **19**, 787.
- Murre, J. 1995. Neurosimulators. In *Handbook of Brain Theory and Neural Networks*, ed. M. Arbib. The MIT Press.
- Optican, L. M. 1994. Control of saccadic trajectory by the superior colliculus. *Contemporary Ocular Motor and Vestibular Research: A Tribute to David A. Robinson*. Stuttgart, Thieme.
- Orban, G. A. 1984. *Studies on Brain Function. Neuronal Operations in the Visual Cortex*. Springer-Verlag, Berlin.
- Ousterhout, J. 1994. *Tcl and the Tk Toolkit*, Addison-Wesley.
- Parent, A., Mackey, A., and De Bellefeuille, L. 1983. “The subcortical afferents to caudate nucleus and putamen in primate: a fluorescence retrograde double-labeling study.” *Neurosci.* **10**, 1137–1150.

- Petrides, M., and Pandya, D. N. 1984 Projections to frontal cortex from the posterior parietal region in the rhesus monkey. *J. Comp. Neurol.* **228**, 105–116.
- Rall, W. 1959. Branching dendritic trees and motoneuron membrane resistivity, *Exp. Neurol.* **2**, 503–532.
- Robinson, D. A. 1970. Oculomotor unit behavior in the monkey. *J. Neurophysiol.* **33**, 393–404.
- Robinson, D. A. 1972. Eye Movement Evoked By Collicular Stimulation In The Alert Monkey. *Vision Res.* **12**, 1795–1808
- Rosenblatt, F. 1961. Principles of Neurodynamics: Perceptrons and the Theory of Brain Mechanisms. Spartan Books, Washington, D.C.
- Rumelhart, D. E., Hinton, G. E., and Williams, R. J. 1986. Learning internal representations by error propagation, in *Parallel Distributed Processing: Explorations in the Microstructure of Cognition*, ed. D. E. Rumelhart, J. L. McClelland, and PDP Research Group, vol. 1, *Foundations*, Cambridge, MA: The MIT Press, pp. 318–362.
- Rumelhart, D. E., and Zipser, D. 1986. Feature Discovery by Competitive Learning. In *Parallel Distributed Processing: Explorations in the Microstructure of Cognition Volume 1: Foundations*, ed. J. L. McClelland and D. E. Rumelhart, pp. 151–193. Bradford Books/The MIT Press.
- Sadikot, A. F., Parent, A., Smith, Y., and Bolam, J. P. 1992. “Efferent connections of the centromedian and parafascicular thalamic nuclei in the squirrel monkey: A light and electron microscopic study of the thalamostriatal projection in relation to striatal heterogeneity.” *J. Comp. Neurol.* **320**, 228–242.
- Sawaguchi, T., and Goldman-Rakic, P. S. 1991. “D1 dopamine receptors in prefrontal cortex: Involvement in working memory.” *Science* **251**, 947–950.
- Sawaguchi, T., and Goldman-Rakic, P. S. 1994. “The role of D1-dopamine receptor in working memory: Local injections of dopamine antagonists into the prefrontal cortex of rhesus monkeys performing an oculomotor delayed-response task.” *J. Neurophysiol.* **71**(2), 515–528.
- Schiller, P. H., and Sandell, J. H. 1983. Interactions between visually and electrically elicited saccades before and after superior colliculus and frontal eye field ablations in the rhesus monkey. *Exp. Brain Res.* **49**, 381–392.
- Schürg-Pfeiffer, E., and Ewert, J.-P. 1981. Investigation of neurons involved in the analysis of gestalt prey features in the frog, “*Rana temporaria*.” *Journal of Comparative Physiology* **141**, 139–152.
- Scudder, C. A. 1988. A New Local Feedback Model of the Saccadic Burst Generator. *J. Neurophysiol.* **59**, 1455–1475.
- Segraves, M., Goldberg, M. E. 1987. Functional Properties of Corticotectal Neurons in the Monkey’s Frontal Eye Field. *J. Neurophysiol.* **58**, 1387–1419.
- Singer, W. 1987. Activity-dependent self-organization of synaptic connections as a substrate of learning. In *The Neural and Molecular Basis of Learning*, ed. J.-P. Changeaux and M. Konishi, pp. 239–262. Dahlem Konferenzen. Chichester: John Wiley & Sons Ltd.
- Smith, M. 1993. “Neural Networks for Statistical Modeling,” Van Nostrand Reinhold.
- Sparks, D. L. 1986. Translation of Sensory Signals Into Commands for Control of Saccadic Eye Movements: Role of Primate Superior Colliculus. *Physiol Rev* **66**: 118–171.
- Sparks, D. A., Mays, L. E. 1983. Spatial Localization of Saccade Targets I. Compensation for Stimulation-Induced Perturbations in Eye Position. *J. Neurophysiol.* **46**, 45–63.
- Squire, L. R., and Moore, R. Y. 1979. “Dorsal thalamic lesion in a noted case of human memory dysfunction.” *Ann. Neurol.* **6**, 503–506.

- Stirling, R. V., and Merrill, E. G. 1987. Functional morphology of frog retinal ganglion cells and their central projections: The dimming detectors. *Journal of Comparative Neurology* **258**, 477–495.
- Stryker, M. P. 1986. The role of neural activity in rearranging connections in the central visual system. In *The Biology of Change in Otorrino-laryngology*, ed. R. Ruben, et al. Elsevier Science Publisher, B. V., pp. 211–224.
- Subramaniam, S., Biederman, I., Kalocsai, P., and Madigan, S. R. 1995. Accurate identification, but chance forced-choice recognition for rsvp pictures. In *Proceedings of the Association for Research in Vision and Ophthalmology*, ARVO, Ft. Lauderdale, Florida.
- Teeters, J. L., and Arbib, M. A. 1991. A model of anuran retina relating interneurons to ganglion cell responses, *Biol. Cybern.* **64**, 197–207.
- Teeters, J. L., Arbib, M. A., Corbacho, F., and Lee, H. B. 1993. Quantitative modeling of responses of anuran retina: Stimulus shape and size dependency. *Vision Research* **33**, 2361–2379.
- Tootell, R. B., Silverman, M. S., and de Valois, R. L. 1981. Spatial frequency columns in primary visual cortex. *Science* **214**, 813–815.
- von der Malsburg, C. 1973. Self-organizing of Orientation Sensitive Cells in the Striate Cortex. *Kybernetik*, **14**, 85–100.
- von der Malsburg, C. 1981. The correlation theory of brain function. Internal report, 81–2, Max-Planck-Institut für Biophysikalische Chemie, Postfach 2841, 3400 Göttingen, FRG. Reprinted in *Models of Neural Networks II*, ed. E. Domany, J. L. van Hemmen, and K. Schulten, chapter 2, pages 95–119. Springer, Berlin, 1994.
- von der Malsburg, C. 1987. Synaptic plasticity as basis of brain self-organization. In *The Neural and Molecular Basis of Learning*, ed. J.-P. Changeaux and M. Konishi, pp. 411–431. Dahlem Konferenzen. Chichester: John Wiley & Sons Ltd.
- von der Malsburg, C. 1990. Network self-organization. In *An Introduction to Neural and Electronic Networks*, ed. S. F. Zornetzer, J. L. Davis, and C. Lau, Academic Press, pp. 421–432.
- von der Malsburg, C., and Buhmann, J. 1992. Sensory segmentation with coupled neural oscillators. *Biol. Cybern.* **67(3)**, 233–242.
- von der Malsburg, C., and Reiser, K. 1995. Pose invariant object recognition in a neural system. In *Proceedings of the International Conference on Artificial Neural Networks ICANN '95*, pages 127–132, Paris. EC2 & Cie.
- von der Malsburg, C., and Singer, W. 1988. Principles of cortical network organization. In *Neurobiology of Neocortex*, ed. P. Rakic and W. Singer, p. 69–99.
- Vorbrüggen, J. C. 1995. Data-driven segmentation of grey-level images with coupled nonlinear oscillators. In *Proceedings of the International Conference on Artificial Neural Networks ICANN '95*, pages 297–302, Paris. EC2 & Cie.
- Wasserman, P. D. 1989. *Neural Computing: Theory and Practice*, 127–149, Van Nostrand Reinhold.
- Weitzenfeld, A.. 1993. ASL: Hierarchy, Composition, Heterogeneity, and MultiGranularity in Concurrent Object-Oriented Programming, *Proceedings of the Workshop on Neural Architectures and Distributed AI: From Schema Assemblages to Neural Networks*, USC, October 19–20.
- Weitzenfeld, A., and Arbib, M. 1991. A Concurrent Object-Oriented Framework for the Simulation of Neural Networks, *Proceedings of ECOOP/OOPSLA '90 Workshop on Object-Based Concurrent Programming*, *OOPS Messenger* **2(2)**, 120–124, April.
- Werbos, P. J. 1974. Beyond Regression: New Tools for Prediction and Analysis in the Behavioral Sciences, Master Thesis, Harvard University.

- Wilson, C. J., Chang, H. T., and Kitai, S. T. 1983. "Origins of postsynaptic potentials evoked in spiny neostriatal projection neurons by thalamic stimulation in the rat." *Exp. Brain Res.* **51**, 217–226.
- Wiskott, L. 1995. Labeled Graphs and Dynamic Link Matching for Face Recognition and Scene Analysis, volume 53 of Reihe Physik. Verlag Harri Deutsch, Thun, Frankfurt am Main, Germany. (PhD thesis).
- Wiskott, L., Fellous, J.-M., Krüger, N., and von der Malsburg, C. 1997. Face recognition by elastic bunch graph matching. *IEEE Transactions on Pattern Analysis and Machine Intelligence* **19(7)**, 775–779.
- Wiskott, L., and von der Malsburg, C. 1993. A neural system for the recognition of partially occluded objects in cluttered scenes. *Int. J. of Pattern Recognition and Artificial Intelligence* **7(4)**, 935–948.
- Yonezawa, A., and Tokoro, M. 1987. Object-Oriented Concurrent Programming. The MIT Press.
- Zucker, R. S. 1989. Short-term synaptic plasticity. *Ann. Rev. Neuroscience* **12**, 13–31.

