CURRICULUM VITAE

Thomas J. Anastasio

PERSONAL INFORMATION:

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Email:	tja@uiuc.edu
Date of Birth:	December 7, 1958
Place of Birth:	Washington, D.C.
Citizenship:	USA

EDUCATION:

Undergraduate:	McGill University, 1975-1980.
Graduate School:	University of Texas at Galveston, 1980-1986.
Postdoctoral Training:	Johns Hopkins University, 1986-1988.

RESEARCH BACKGROUND:

Associate Professor, Department of Molecular and Integrative Physiology, University of Illinois at Urbana/Champaign, 1997-.

Visiting Scholar, Department of Cognitive and Neural Systems, Boston University, 1998-1999.

Assistant Professor, Department of Molecular and Integrative Physiology, University of Illinois at Urbana/Champaign, 1991-1997.

Research Assistant Professor, Department of Otolaryngology, USC Medical School, 1988-1991.

Postdoctoral Research Fellow, Department of Ophthalmology, The Johns Hopkins University School of Medicine, Sponsor: David A. Robinson, Ph.D., 1986-1988.

NASA Predoctoral Fellow, The Vestibular Research Facility of the NASA-Ames Research Center, 1982.

Predoctoral Research Fellow, Department of Otolaryngology, The University of Texas Medical Branch, Advisor: Manning J. Correia, Ph.D., 1980-1986.

Undergraduate Researcher, Department of Physiology, Biomedical Engineering Unit, McGill University, Preceptor: Robert E. Kearney, Ph.D., 1979-1980.

HONORS AND AWARDS:

The James E. Beall II Memorial Award, The University of Texas at Galveston, 1986.

James E. Heath Award for Excellence in Teaching, University of Illinois, 1997-1998.

Teachers Ranked as Excellent by Their Students for Molecular and Cellular Biology/Life Science Courses at the University of Illinois, 2000-2005.

TRECC (Technology Research, Education, and Commercialization Center) Accelerator Award, 2005.

RESEARCH GRANTS:

As Principle Investigator:

Beckman Foundation Grant, 2006-2012, $92,000.

Illinois Department of Public Health, 2009-2010, $28,000.

TRECC Accelerator Grant, 2006, $47,000.

Office of Naval Research Grant, 2003-2007, $350,000.

Office of Naval Research Grant, 2001-2003, $360,000.

National Science Foundation Grant, 2000-2004, $300,000.

University of Illinois at Urbana/Champaign Campus Research Board, 2000, $20,000.

Critical Research Initiatives Grant, 1997-2000, $200,000.

National Institutes of Health Grant, 1994-2001, $461,310.

National Science Foundation Grant, 1993-1999, $229,530.

University of Illinois at Urbana/Champaign Campus Research Board, 1992, $25,000.

Whitaker Foundation Grant, 1990-1995, $176,263.

University of Southern California Faculty Research Fund, 1988-1990, $16,250.

National Eye Institute NRSA Individual Postdoctoral Grant, 1986-1988, $39,416.

NASA Predoctoral Training Grant, NGT 44-088-800, 1981-1984, $39,000.

As Co-Investigator:

Department of Energy Grant, 2007 (summer), $100,000 (PI: Fred Rothganger)

National Institutesof Health Grant, 2006-2011, $1,250,000 (PI:Barry Stein)

National Institutesof Health Grant, 2004-2008, $925,000 (PI:Joe Malpeli)

National Science Foundation Grant, 2004-2009, $968,079 (PI: Al Feng)

National Science Foundation Grant, 1997-2000, $931,095 (PI: Thomas Huang)

National Science Foundation Grant, 1998-2001, $298,275 (PI: Michael Gabriel)

PROFESSIONAL ORGANIZATIONS:

Society Member:

International Brain Research Organization
International Multisensory Research Forum
International Neural Network Society
International Soceity to Advance Alzheimer Research and Treatment
Society for Neuroscience

PROFESSIONAL SERVICE:

Meeting Coordinator:

Co-organizer of the Fourth through Seventh Annual Conferences on Understanding Complex Systems, University of Illinois at Urbana-Champaign, Urbana, Illinois, May 2004 - 2007.

Co-organizer of the Workshop on Fluctuations in Living Systems, held in conjunction with the meetings of the American Physical Society, St. Louis, MO, March 22-26, 1996.

Meeting Session Chair:

Session on Neural Networks, Fourth-Sixth Conference on Understanding Complex Systems, University of Illinois at Urbana-Champaign, Urbana, Illinois, 2004 -- 2006.

Session on Neural Nets for Perception II, International Work-Conference on Artificial and Natural Neural Networks, Lanzarote, Canary Islands, Spain, June 4-6, 1997.

Session on Computational Modeling of Multisensory Processes, Symposium on Multisensory Integration Subserving Orienting Behavior, Naples, Florida, April 14-16, 2002.

Panel Member and Respondent:

Session on Multidisciplinary Approached to Religion, Conference on The Brain and the Subject of Culture, Urbana, Illinois, November 13, 2010.

Reviewer for Conferences:

IEEE Conference on Neural Information Processing Systems -- Natural and Synthetic.
NASA Biomorphic Robotics Workshop

Grant Proposal Review Panel Member:

NSF Program on Biosystems Analysis and Control
NIH Sensorimotor Integration Study Section
Illinois Department of Public Health Alzheimer Disease Research Fund

Ad hoc Reviewer of Grant Proposals:

Alzheimer Association
Canadian Institutes of Health Research
Indo-US Science and Technology Fellowship Program.
NASA Office of Life and Microgravity Sciences and Applications
National Institutes of Health
National Science Foundation
New Zealand Neurological Foundation.
UIUC Campus Research Board.
Vienna Science and Technology Fund
Wellcome Trust, London, UK.

Journal Editor:

Guest editor for Neurocomputing: Special Issue on Biological Neural Networks.

Reviewer of Journal Articles:

Biological Cybernetics
Cognitive, Affective, and Behavioral Neuroscience
Cognitive Brain Research
Ethos
European Journal of Neuroscience
IEEE Transactions on Biomedical Engineering
Experimental Brain Research
International Journal of Developmental Neuroscience
Journal of Applied Physiology
Journal of Computational Neuroscience
Journal of Neurophysiology
Journal of Neuroscience
Journal of Neuroscience Methods
Neural Networks
NeuroReport
Public Library of Science ONE
The Cerebellum
Transactions on Biomedical Engineering

Reviewer of Book Chapter:

Handbook of Brain Theory and Neural Networks

INVITED PRESENTATIONS:

Anastasio, T.J. Distributed representations of eye-velocity command signals by vestibular nucleus neurons. Woods Hole Workshop on Computational Neuroscience, Woods Hole, MA, Aug. 28 - Sept. 4, 1988.

Anastasio, T.J. Neural network models of the vestibulo-ocular reflex. Joint Signal and Image Processing Institute / Center for Neural Engineering, Technology Transfer Conference, University of Southern California, Los Angeles, CA, May 17 - 18, 1990.

Anastasio, T.J. Distributed representations of vestibulo-oculomotor and other visuomotor control signals in mammals. Center for Neural Engineering, Workshop on Visual Structures and Integrated Functions, University of Southern California, Los Angeles, CA, August 8-10, 1990.

Anastasio, T.J. Learning in the vestibular system: simulations of vestibular compensation using recurrent back-propagation. Institute for Neural Computation Seminar Series, University of California at San Diego, La Jolla, CA, May 16, 1990.

Anastasio, T.J. Signal processing and plasticity in a recurrent neural network model of the vestibulo-ocular reflex. Berkeley/UCSF Bioengineering Seminar, University of California at Berkeley, Berkeley, CA, April 9, 1991.

Anastasio, T.J. Modeling the vestibulo-ocular reflex: from classical mechanics to neural networks. Institute for Scientific Computing Research, Workshop on Analysis and Modeling of Neural Systems, University of California at San Francisco, San Francisco, CA, July 23 - 26, 1991.

Anastasio, T.J. Modeling the vestibulo-ocular reflex: toward an understanding of signal processing by neurons. Biology Department Seminar Series, Marquette University, Milwaukee, WI, March 6, 1992.

Anastasio, T.J. Distributed relaxation in the vestibulo-ocular reflex. Festschrift in Honor of David A. Robinson, Eibsee, Germany, September 26-29, 1993.

Anastasio, T.J. Using fractional calculus to understand motor control in the vestibulo-oculomotor system. Graduate Student Seminar Series, Northwestern University, Chicago, IL, March 18, 1994.

Anastasio, T.J. Dynamic modification and stochasticity during vestibular compensation in the horizontal vestibulo-ocular reflex of the goldfish. Physiology and Biophysics Seminar Series, Washington University School of Medicine, St. Louis, MO, October 4, 1994.

Anastasio, T.J. Stochastic integrate and fire models of quick eye movement interval distributions. Bioengineering Seminar Series, Beckman Institute, University of Illinois at Urbana/Champaign, Urbana, IL, March 21, 1995.

Anastasio, T.J. A random walk model of fast-phase timing during optokinetic nystagmus. Workshop on Fluctuations in Living Systems, St. Louis, MO, March 22-26, 1996.

Anastasio, T.J. Probabilistic (Bayesian) analysis of multisensory enhancement in the superior colliculus. Department of Anatomy and Neurobiology Seminar Series, St. Louis University Health Sciences Center, St. Louis, MO, April 22, 1998.

Anastasio, T.J. A different view of cerebellar function. Center for Adaptive Systems and Department of Cognitive and Neural Systems, Boston University, Boston, MA, December 4, 1998.

Anastasio, T.J. Modeling multisensory enhancement in the superior colliculus. Departments of Medical Engineering, and Neurobiology, Wake Forest University School of Medicine, Winston-Salem, NC, October 5, 1999.

Anastasio, T.J. Modeling multisensory enhancement in the superior colliculus. International Multisensory Research Forum, 2nd Annual Multisensory Research Conference, Tarrytown, NY, October 7, 2000.

Anastasio, T.J. Developing a self-aiming camera based on the neurobiology of the superior colliculus. Office of Naval Research Program Review for Sensory and Motor Adaptive Control, Arlington, Virginia, April 23, 2001.

Anastasio, T.J. Computing multisensory target probabilities on a neural map. Symposium on Neural Systems and Engineering at the Conference of the Engineering in Medicine and Biology Society of the IEEE, Istanbul, Turkey, October 25-28, 2001.

Anastasio, T.J. Analysis and modeling of multisensory enhancement in the superior colliculus. Workshop on Multisensory Perceptive Systems: Human and Machine Processing of Multi-modal Data, Wistler, Canada, December 7-8, 2001.

Anastasio, T.J. The Bayes' rule model of multisensory enhancement in the superior colliculus. Symposium on Multisensory Integration Subserving Orienting Behavior, Naples, Florida, April 14-16, 2002.

Anastasio, T.J. A computational model of multisensor fusion in the cortico-tectal system in the brain. NASA Center for Advanced Studies in the Space Life Sciences Workshop on Combating Uncertainty with Fusion, Woods Hole, Massachusetts, April 22-24, 2002.

Anastasio, T.J. A computational model of the development of the cortico-tectal pathways mediating multisensory enhancement. Third Annual Meeting of the International Multisensory Research Forum, Geneva, Switzerland, May 24-26, 2002.

Anastasio, T.J. Developing an adaptive, self-aiming camera based on the neurobiology of the superior colliculus. Office of Naval Research Adaptive Neural Systems Program Review, Arlington, Virginia, March 12-14, 2003.

Anastasio, T.J. A single multisensory neuron model simulates both enhancement between modalities and suppression within modalities. The First International IEEE EMBS Conference on Neural Engineering, Capri, Italy, March 20-22, 2003.

Swarup, S., Oezer, T., Ray, S.R., and Anastasio, T.J. A self-aiming camera based on neurophysiological principles. International Joint Conference on Neural Networks, Portland, Oregon, July 20-24, 2003.

Anastasio, T.J. Bottom-up and top-down signal processing in the corticotectal system of the brain. Workshop on New Directions for Signal Processing in the 21st Century, Lake Louise, Alberta, Canada, October 5-10, 2003.

Anastasio, T.J. Fractional-order dynamics in the oculomotor system. Department of Bioengineering Seminar Series, University of Illinois at Chicago, Chicago, Illinois, February 6, 2004.

Anastasio, T.J. Statistical inference as one possible function of computation by neurons. Cherry Bud Workshop, Yokohama, Japan, March 21-23, 2004.

Anastasio, T.J. Demonstrating an adaptive, self-aiming camera based on the neurobiology of the superior colliculus. Office of Naval Research Adaptive Neural Systems Program Review, Arlington, Virginia, April 7-8, 2004.

Anastasio, T.J. Multiple time scale control of eye movement by neural networks. Fourth Annual Conference on Understanding Complex Systems, University of Illinois at Urbana-Champaign, Urbana, Illinois, May 17-20, 2004.

Anastasio, T.J. A computational model of the development of the cortico-tectal pathways mediating multisensory enhancement. Fifth Annual Meeting of the International Multisensory Research Forum, Barcelona, Spain, June 2-5, 2004.

Anastasio, T.J. Neural control of fractional-order oculomotor dynamics. First Workshop by the International Federation of Automatic Control on Fractional Differentiation and its Applications, Bordeaux, France, July 19-21, 2004.

Anastasio, T.J., Exploring the multisensory paradigm. AI-Vision-Robotics-HCI Seminar, Department of Computer Science, UIUC, March 3, 2006.

Anastasio, T.J. A self-aiming camera that implements intelligent multisensor fusion. Office of Naval Research Adaptive Neural Systems Program Review, Arlington, Virginia, May 5-6, 2005.

Anastasio, T.J., Modeling shows how sparse innervation by the cerebellum can independently adjust the amplitude and time course of the response of a neural network. The Fifth Annual Understanding Complex Systems Conference: Bioinformatics and Computational Complexity, UIUC, May 17-19, 2005.

Anastasio, T.J., Modeling shows how vestibulo-ocular reflex gain and oculomotor integrator time constant could be independently adjusted through sparse innervation of the vestibular nuclei by the cerebellar flocculus. 35th Annual Meeting of the Society for Neuroscience, Washington, DC, November 12-17, 2005.

Anastasio, T.J., Testing models of multisensory integration. Computational and Systems Neuroscience Workshop, Park City, Utah, March 9-10, 2006.

Anastasio, T.J., Intelligent multisensor fusion. The TRECC Accelerator Awards Workshop, NCSA, UIUC, May 15, 2006.

Anastasio, T.J., Neural map formation is a side-effect of cooperative mechanisms that increase the information content of neural representations. The Sixth Annual Conference on Understanding Complex Systems: Molecular Origin of Life and Dynamics of Information, Energy, and Water Flows on Evolving Networks, UIUC, May 15-18, 2006.

Anastasio, T.J. A self-aiming camera that implements intelligent multisensor fusion. Office of Naval Research Adaptive Neural Systems Program Review, Arlington, Virginia, April 26-27, 2007.

Anastasio, T.J., Mathematical analysis of control by the cerebellum of the oculomotor neural integrator. Seventh Annual Conference on Understanding Complex Systems: Bioinformatics, Autocatalytic Processes, and Control of Systems of Systems, UIUC, May 14-17, 2007.

Anastasio, T.J., Testing models of multisensory integration. Neurobiology and Anatomy Departmental Seminar, Wake Forest University School of Medicine, Winston-Salem, North Carolina, June 5, 2007.

Anastasio, T.J., Malfunciton of sensitive cerebellar control of brainstem vestibular circuits may explain congenital nystagmus. The Inner Ear: A Celebration of the Career and Retirement of Manning J. Correia, University of Texas at Galveston, May 30, 2008.

Anastasio, T.J., Memory and Forgetting: Analogous Processes on Individual and Collective Levels. Plenary Talk presented at the Eight Annual Conference on Understanding Complex Systems Conference, UIUC, May 14-17, 2008.

Anastasio, T.J., Complex Systems Modeling of Alzheimer Disease Pathogenesis. Brian & Behavior Discovery Institute Seminar Series, Medical College of Georgia, Augusta, GA, February 23, 2011.

Anastasio, T.J., Probabilistic Inference and Prediction in Saccadic Target Detection. Topics in Cognitive and Neural Systems Seminar Series, Medical College of Georgia, Augusta, GA, February 23, 2011.

Anastasio, T.J. A Computational Perspective on Neuronal Representations. Central Virginia Chapter of the Society for Neuroscience Annual Symposium on Neuroengineering: Insights from Brain-Mind Interfaces. Virginia Commonwealth University, Richmond, VA, March 18, 2011.

Anastasio, T.J. Data Driven Modeling of Neurobiological Processes: An Approach using Maude, a Mathematical Modeling Tool. Sandia National Labs Seminar, Sandia National Labs, Albuquerque, NM, February 23, 2012.

PUBLICATIONS:

Journal Articles:

Anastasio, T.J., Correia, M.J. and Perachio, A.A. (1985) Spontaneous and driven responses of semicircular canal primary afferents in the unanesthetized pigeon. J. Neurophysiol. 54: 335-347.

Anastasio, T.J. and Correia, M.J. (1988) A frequency and time domain study of the horizontal and vertical vestibuloocular reflex in the pigeon. J. Neurophysiol. 59: 1143-1161.

Anastasio, T.J. and Robinson, D.A. (1989) Distributed parallel processing in the vestibulo-oculomotor system. Neural Computation 1: 230-241.

Anastasio, T.J. and Robinson, D.A. (1989) The distributed representation of vestibulo-oculomotor signals by brainstem neurons. Biol. Cybern. 61: 79-88.

Anastasio, T.J. and Robinson, D.A. (1990) Distributed parallel processing in the vertical vestibulo-ocular reflex: learning networks compared to tensor theory. Biol. Cybern. 63: 161-167.

Anastasio, T.J. (1991) Neural network models of velocity storage in the horizontal vestibulo-ocular reflex. Biol. Cybern. 64: 187-196.

Anastasio, T.J. and Robinson, D.A. (1991) Failure of the oculomotor neural integrator from a discrete midline lesion between the abducens nuclei in the monkey. Neurosci. Lett. 127: 82-86.

Anastasio, T.J. (1992) Simulating vestibular compensation using recurrent back-propagation. Biol. Cybern. 66: 389-397.

Anastasio, T.J. and Correia, M.J. (1994) "Velocity leakage" in the pigeon vestibulo-ocular reflex. Biol. Cybern. 70: 235-245.

Anastasio, T.J. (1994) Testable predictions from recurrent back-propagation models of the vestibulo-ocular reflex. Neurocomputing. 6: 237-255.

Anastasio, T.J. (1994) The fractional-order dynamics of brainstem vestibulo-oculomotor neurons. Biol. Cybern. 72: 69-79.

Ratnam, R. and Anastasio, T.J. (1995) Evidence for a cooperative learning mechanism in the vestibulo-ocular reflex. NeuroReport. 6: 2129-2133.

Weissenstein, L., Ratnam, R. and Anastasio, T.J. (1996) Vestibular compensation in the horizontal vestibulo-ocular reflex of the goldfish. Behav. Brain Res. 75: 127-137.

Anastasio, T.J. (1996) A random walk model of fast-phase timing during optokinetic nystagmus. Biol. Cybern. 75: 1-9.

Dow, E.R. and Anastasio, T.J. (1996) Violation of superposition by the vestibulo-ocular reflex of the goldfish. NeuroReport. 7: 1305-1309.

Keng, M.J. and Anastasio, T.J. (1997) The horizontal optokinetic response of the goldfish. Brain Behav. Evol. 49: 214-229.

Anastasio, T.J. (1997) A burst-feedback model of fast-phase burst generation during nystagmus. Biol. Cybern. 76: 139-152.

Dow, E.R. and Anastasio, T.J. (1997) Induction of periodic alternating nystagmus in intact goldfish by sinusoidal rotation. NeuroReport. 8: 2755-2759.

Dow, E.R. and Anastasio, T.J. (1998) Analysis and neural network modeling of the nonlinear correlates of habituation in the vestibulo-ocular reflex. J. Comp. Neurosci. 5: 171-190.

Anastasio, T.J. (1998) Nonuniformity in the linear network model of the oculomotor integrator produces approximately fractional-order dynamics and more realistic neuron behavior. Biol. Cybern. 79: 377-391.

Dow, E.R. and Anastasio, T.J. (1999) Analysis and modeling of frequency specific habituation of the goldfish vestibulo-ocular reflex. J. Comput. Neurosci. 7: 55-70.

Dow, E.R. and Anastasio, T.J. (1999) Dual-frequency habituation of the goldfish vestibulo-ocular reflex. NeuroReport 10: 1729-1734.

Sudlow, L.C. and Anastasio, T.J. (1999) Violation of homogeneity by the vestibulo-ocular reflex of the goldfish. NeuroReport 10: 3881-3885.

Anastasio, T.J., Patton, P.E. and Belkacem-Boussaid, K. (2000) Using Bayes' rule to model multisensory enhancement in the superior colliculus. Neural Computation 12: 997-1019.

Anastasio, T.J. (2001) A pattern-correlation model of vestibulo-ocular reflex habituaion. Neural Networks 14: 1-22.

Anastasio, T.J. (2001) Input minimization: A model of cerebellar learning without climbing fiber error signals. NeuroReport 12: 3825-3831.

Patton, P.E., Belkacem-Boussaid, K. and Anastasio, T.J. (2002) Multimodality in the superior colliculus: An information theoretic analysis. Cognitive Brain Research 14: 10-19.

Patton, P.E. and Anastasio, T.J. (2003) Modeling cross-modal enhancement and modality-specific suppression in multisensory neurons. Neural Computation 15: 783-810.

Anastasio, T.J. and Patton, P.E. (2003) A two-stage unsupervised learning algorithm reproduces multisensory enhancement in a neural network model of the corticotectal system. Journal of Neuroscience 23:6713-6727.

Anastasio, T.J. and Gad, Y.P. (2007) Sparse cerebellar input can morph the dynamics of a model oculomotor neural integrator. Journal of Computational Neuroscience 22:239-254.

Raginsky, M. and Anastasio, T.J. (2008) Cooperation in self-organizing map networks enhances information transmission in the presence of input background activity. Biological Cybernetics 98: 195-211.

Barreiro, A.K., Bronski, J.C. and Anastasio, T.J. (2009) Bifurcation theory explains waveform variability in a congenital eye movement disorder. Journal of Computational Neuroscience 26: 321-329.

Rothganger, F. and Anastasio, T.J. (2009) Using input minimization to train a cerebellar model to simulate regulation of smooth pursuit. Biological Cybernetics 101:339-359.

Gad, Y.P. and Anastasio, T.J. (2010) Simulating the shaping of the fastigial deep nuclear saccade command by cerebellar Purkinje cells. Neural Networks 23: 789-804.

Anastasio, T.J. (2011) Data-driven modeling of Alzheimer disease pathogenesis. Journal of Theoretical Biology 290:60-72.

Ma, R., Cui, H., Lee, S-H., Anastasio, T.J. and Malpeli, J.G. (2013) Predictive encoding of moving target trajectory by neurons in the midbrain. Journal of Neurophysiology 109: 2029-2043.

Anastasio, T.J. (2013) Exploring the contribution of estrogen to amyloid-beta regulation: a novel multifactorial computational modeling approach. Frontiers in Pharmacology 4: 16.

Anastasio, T.J. (accepted) Computational search for hypotheses concerning the endocannabinoid contribution to the extinction of fear conditioning. Frontiers in Computational Neuroscience.

Books:

Anastasio, T.J. (2010) Tutorial on Neural Systems Modeling. Sinauer Associates, Sunderland, MA

Anastasio, T.J., Ehrenberger, K., Watson, P., Zhang, W. (2012) Individual and Collective Memory Formation: Analogous Processes on Different Levels. The MIT Press, Cambridge.

Book Chapters:

Anastasio, T.J. (1995) Vestibulo-ocular reflex, performance and plasticity. In: Arbib, M.A. (ed) The Handbook of Brain Theory and Neural Networks, Bradford Books/The MIT Press, Cambridge.

Anastasio, T.J. (2003) Vestibulo-ocular reflex, performance and plasticity. In: Arbib, M.A. (ed) The Handbook of Brain Theory and Neural Networks. Volume II, Bradford Books/The MIT Press, Cambridge.

Anastasio, T.J. and Patton, P.E. (2004) Analysis and modeling of multisenosry enhancement in the deep superior colliculus. In: Calvert, G., Spence, C., and Stein, B. (eds) The Handbook of Multisensory Processes, Bradford Books/The MIT Press, Cambridge.

Anastasio, T.J. (2005) Neural control of fractional-order oculomotor dynamics. In: Le Mehauté, A., Tenreiro Machado, J.A., Trigeassou, J.C., and Sabatier, J. (eds) Fractional Differentiation and it Applications. Volume 3 – Systems Analysis, Implementation and Simulation, Systems Identification and Control, U Books on Demand.

Conference Proceedings:

Anastasio, T.J. (1991) Distributed processing in vestibulo-ocular and other oculomotor subsystems in monkeys and cats. In: Arbib, M.A. and Ewert, J.-P. (eds) Visual Structures and Integrated Functions, Springer-Verlag, New York.

Anastasio, T.J. (1991) A Recurrent neural network model of velocity storage in the vestibulo-ocular reflex. In: Lippman, R.P., Moody, J.E., Touretzky, D.S. (eds) Advances in Neural Information Processing Systems 3, Morgan Kaufmann, San Mateo.

Anastasio, T.J. (1992) Implications of vestibular nucleus neuron rectification for signal processing in the horizontal vestibulo-ocular reflex. In: Cohen, B., Tomko, D., Guedry,

F. (eds) Sensing and controlling motion: vestibular and sensorimotor function, The New York Academy of Sciences, New York.

Anastasio, T.J. (1992) Learning in the vestibular system: simulations of vestibular compensation using recurrent back-propagation. In: Moody, J.E., Hanson, S.J., Lippman, R.P. (eds) Advances in Neural Information Processing Systems 4, Morgan Kaufmann, San Mateo.

Anastasio, T.J. (1993) Modeling vestibulo-ocular reflex dynamics: from classical analysis to neural networks. In: Eeckman, F.H. (ed) Neural Systems: Analysis and Modeling, Kluwer Academic Publishers, Norwell.

Anastasio, T.J. (1993) Recurrent backpropagation models of the vestibulo-ocular reflex provide experimentally testable predictions. In: Eeckman, F.H., Bower, J.M. (eds) Computation and Neural Systems 1992, Kluwer Academic Publishers, Norwell.

Anastasio, T.J. (1994) Control systems analysis of the vestibulo-ocular reflex in the pigeon. In: Fuchs, A.F., Buttner, U., Zee, D.S. (eds) Four Decades of Seminal Vestibulo-Ocular Research, Thieme Verlag, Stuttgart.

Anastasio, T.J. (1997) Symmetry and self-organization of the oculomotor neural integrator. In: Mira, J., Moreno-Díaz, R., Cabestany, J. (eds) Lecture Notes in Computer Science: Biological and Artificial Computation: From Neuroscience to Technology, Springer, Berlin.

Dow, E.R. and Anastasio, T.J. (1998) Instabilities in eye movement control: a model of periodic alternating nystagmus. In: Jordan, M.I., Kearns, M.J., Solla, S.A. (eds) Advances in Neural Information Processing Systems 4, Morgan Kaufmann, San Mateo.

Pan, H., Liang, Z.P., Anastasio, T.J. and Huang T.S. (1998) A hybrid NN-Bayesian architecture for information fusion. ICIP98.

Anastasio, T.J. and Patton, P.E. (2001) Computing multisensory target probabilities on a neural map. Proceedings of the Conference of the Engineering in Medicine and Biology Society of the IEEE.

Anastasio, T.J., and Patton, P.E. (2003) A single multisensory neuron model simulates both enhancement between modalities and suppression within modalities. Proceedings of the First International IEEE EMBS Conference on Neural Engineering.

Swarup, S., Oezer, T., Ray, S.R. and Anastasio, T.J. (2003) A self-aiming camera based on neurophysiological principles. Proceedings of the International Joint Conference on Neural Networks (IJCNN '03), vol. 4, Portland, OR, pp. 3201-3206.

Anastasio, T.J. (2004) Neural control of fractional-order oculomotor dynamics. First Workshop by the International Federation of Automatic Control on Fractional Differentiation and its Applications, Bordeaux, France.

Commentaries:

Anastasio, T.J. (2003) Probability rather than logic as the basis of perception. Behavioral and Brain Sciences 26: 283-284.

Patent:

Anastasio, T.J., Ray, S.R., and Huang, T. (2004) Method for determination of spatial target probability using a model of multisensory processing by the brain. Patent number: US 6,795,794 B2, Issue Date: September 21, 2004.

Abstracts:

Anastasio, T.J., Correia, M.J. and Perachio, A.A. (1983) Spontaneous activity and driven responses of semicircular canal primary afferent neurons in the alert pigeon. Soc. Neurosci. Abstr. 9: p. 525.

Correia, M.J., Anastasio, T.J. and Lang, D.G. (1985) Factors affecting gravity reception in birds. NASA/AIBS Workshop on Animal Gravity Sensing Systems.

Correia, M.J., Kemmerer, C.E., Anastasio, T.J. and Perachio, A.A. (1985) Recovery of modulation frequency of action potential trains. 38th ACEBM Meeting.

Anastasio, T.J. and Correia, M.J. (1986) The vestibuloocular reflex in the pigeon. Soc. Neurosci. Abstr. 12: p. 252.

Anastasio, T.J. and Robinson, D.A. (1988) A single unit and lesion study of the primate nucleus prepositus hypoglossi (NPH). Suppl. to Invest. Ophthalmol. Vis. Sci. 29: p. 167.

Anastasio, T.J. and Robinson, D.A. (1989) Distributed representation of oculomotor command signals by vestibular nucleus neurons. Suppl. to Invest. Ophthalmol. & Vis. Sci. 30: p. 51.

Anastasio, T.J. and Robinson, D.A. (1989) Distributed parallel processing in the vertical vestibuloocular reflex. Soc. Neurosci. Abstr. 15: p. 808.

Anastasio, T.J. (1990) Compensation for hemilabyrinthectomy in a recurrent neural network model of the vestibulo-ocular reflex (VOR). Soc. Neurosci. Abstr. 16: p. 969.

Anastasio, T.J. (1990) Neural network models reveal the organizational principles of the vestibulo-ocular reflex and explain the properties of its interneurons. Abstracts of

Papers: 1990 IEEE Conference on Neural Information Processing Systems -- Natural and Synthetic.

Anastasio, T.J. (1991) Learning in the vestibular system: simulations of vestibular compensation using recurrent back-propagation. Abstracts of Papers: 1991 IEEE Conference on Neural Information Processing Systems -- Natural and Synthetic.

Anastasio, T.J. (1991) Signal processing and plasticity in a recurrent neural network model of the horizontal vestibulo-ocular reflex. Abstracts of the NYAS Conference on Sensing and controlling motion: vestibular and sensorimotor function.

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