

Nigel Stepp

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Education

Ph.D., Experimental Psychology, Jan 2012
Perception, Action, & Cognition
University of Connecticut
Storrs, CT

B.S., Materials Science & Engineering, May 2001
Carnegie Mellon University
Pittsburgh, PA

Professional Societies International Society for Ecological Psychology, Institute of Electrical and Electronics Engineers

Research Interests Emergent Computation, Anticipatory Systems

Professional Experience

08/2010–present Post-doctoral Research, HRL Laboratories, LLC
06/2003–06/2005 Software Developer, IMAKE Financial Consulting, Inc.
05/2001–05/2002 Software Developer, United States Steel

Teaching Experience Research Methods Laboratory, Introduction to Programming

Prospective Courses Statistics, Time-series Analysis, Matlab/General Programming, Sensation & Perception, Motor Control, Nonlinear Dynamics

Technical Skills

Programming Languages AWK, C/C++, C#, Fortran, Haskell, Java, Matlab, Python, Perl, UNIX Shells, x86 Assembly

Algorithms EMG analysis, Motion tracking analysis, Nonlinear time-series analysis, Relative coordination, Symmetry transformations, Voice activity detection

Hardware and Software Computer algebra systems, Electromagnetic motion tracking, IR controlled robotics, Goniometric motion tracking, Simulink, Surface EMG

Review Activity

Psychological Review, 2012

Journal of Experimental Psychology: Human Perception & Performance, 2008

Psychonomic Bulletin & Review, 2009

Publications

Stepp, N. & Srinivasa, N. (2012). A formal model for autocatakinetic systems. *Ecological Psychology, 24*, 204–219.

Moreno, M., Stepp, N. & Turvey, M. T. (2011). Whole body lexical decision. *Neuroscience Letters, 490*, 126–129.

Stepp, N., Chemero, A. & Turvey, M. T. (2011). Philosophy for the Rest of Cognitive Science. *Topics in Cognitive Science, 3*, 425–437.

Stepp, N. & Turvey, M. T. (2010). On Strong Anticipation. *Cognitive Systems Research, 11*, 148–164.

Stepp, N. (2009). Anticipation in feedback-delayed manual tracking of a chaotic oscillator. *Experimental Brain Research, 198*, 521–525.

Stepp, N. & Frank, T. D. (2009). A data-analysis method for decomposing synchronization variability of anticipatory systems into stochastic and deterministic components. *European Physical Journal B: Condensed Matter Physics, 67*, 251–257.

Stephen, D. G., Stepp, N., Dixon, J. A. & Turvey, M. T. (2008). Strong anticipation: Sensitivity to long-range correlations in synchronization behavior. *Physica A, 387*, 5271–5278.

Stepp, N. & Turvey, M. T. (2008). Anticipating synchronization as an alternative to the internal model. *Behavioral and Brain Sciences, 31*, 216–217.

Invited Colloquia

Stepp, N. (Sep, 2009). Strong anticipation in physical and biological systems. University of Cincinnati.

Conference Presentations

- Stepp, N. (Jul, 2012). Anticipation through coupling. Mathematical Psychology, Columbus, OH.
- Stepp, N. (Aug, 2009). Circadian synchronization: dynamical account of a 'representation-hungry' problem. Dynamics in Cognition, Storrs, CT.
- Stepp, N. (Mar, 2009). Synchronizing with the future of a chaotic time series, New England Sequencing and Timing. New Haven, CT.
- Stepp, N. (Aug, 2007). Strong anticipation, weak anticipation, and predictive homeostasis. Dynamics in Cognition, Storrs, CT
- Stepp, N. & Turvey, M. T. (Jul, 2007). Strong anticipation, weak anticipation, and ecological theory. International Conference on Perception and Action. Yokohama, Japan.

Posters

- Moreno, M., Stepp, N., Vaz, D., Abdolvahab, M. & Turvey, M. T. (2010). Whole Body Lexical Decision.
- Stepp, N. (2009). Anticipation in feedback-delayed manual tracking of a chaotic oscillator.
- Stepp, N. & Frank, T. D. (2008). Method for determining strength of coupling and fluctuating forces in anticipatory systems.

CESPA Colloquia Series

- Stepp, N. (March, 2010). Contemporary methods for impredicative computation.
- Stepp, N. (Feb, 2009). Axiomatic construction of the Ecological Event.