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Education

Ph.D.	1994	Computer and Information Science Dissertation: <i>Dynamic Representation of Musical Structure</i> The Ohio State University, Columbus, OH
M.S.	1989	Computer Science Worcester Polytechnic Institute, Worcester, MA
	1987	Far East Asian Languages Concentrated Program Cornell University, Ithaca, NY
B.S.	1982	Mathematics / Music Performance Southern Methodist University, Dallas, TX Colorado College, Colorado Springs, CO

Professional Experience

Sep 1995- Present	Postdoctoral Research Fellow Institute for Research in Cognitive Science University of Pennsylvania Philadelphia, PA
Nov 1994- Aug 1995	NRC Postdoctoral Research Associate Armstrong Laboratory Wright-Patterson AFB, OH
Sep 1993 - Aug 1994	Ohio State University Presidential Fellowship
Oct 1992 - Aug 1993	Research Assistant to Dr. Caroline Palmer
Jun 1990 - May 1992	Department of Psychology The Ohio State University
Jun 1992 - Sep 1992	OSU Cognitive Science Graduate Research Fellowship
Oct 1989 - Jun 1990	Teaching Assistant Department of Computer and Information Science The Ohio State University
Oct 1987 - Oct 1988	Visiting Research Associate Toshiba Research and Design Center Kawasaki, Japan

Nov 1988 - Aug 1989	Research Assistant
Jun 1986 - Jun 1987	Artificial Intelligence Research Group Worcester Polytechnic Institute
Jan 1986 - Jun 1986	Teaching Assistant Computer Science Department Worcester Polytechnic Institute
Jun 1983 - Dec 1985	Field Service Support Engineer Otis Elevator Company North American Operations Farmington, CT

Awards

1993-94	OSU Presidential Fellowship
1993	William James Award (OSU Center for Cognitive Science)
1993	Neural Information Processing Society Student Travel Award
1992	OSU Cognitive Science Graduate Research Fellowship
1991	Neural Information Processing Society Student Travel Award
1987	American Electronics Association Japan Fellowship

Professional Organizations, Honor Societies, and Service

Member	Upsilon Pi Epsilon Honorary Society in the Computing Sciences
Member	Cognitive Science Society, Association for Computing Machinery, American Psychological Association, Acoustical Society of America
Vice President	Graduate Students in Cognitive Science Executive Committee (1992-93)
Reviewer	<i>IEEE Expert</i> , <i>Neural Computation</i> , <i>Connection Science</i> , <i>Music Perception</i> , IJCI '97, ICAD '97, NIPS 97

Publications

Refereed Journal Articles

Large, E. W., Christensen, H. I., and Bajcsy, R. (accepted). Scaling the dynamic approach to path planning and control: Competition among behavioral constraints. *International Journal of Robotics Research*.

Venetianer, P., Large, E. W., and Bajcsy, M. R. (1997). Methodology for evaluation of task performance in robotic systems: A case study in vision-based localization. *Machine Vision and Applications*, 9 (5-6), 304-320.

Large, E. W., Palmer, C., & Pollack, J. B. (1995). Reduced memory representations for music. *Cognitive Science*, 19, 53-96.

Large, E. W., & Kolen, J. F. (1994). Resonance and the perception of musical meter. *Connection Science*, 6 (1), 177 - 208.

Large, E. W. (1993). Dynamic programming for the analysis of serial behaviors. *Behavior Research Methods, Instruments, and Computers*, 25 (2), 238-241.

Journal Articles Currently Under Review

Large, E. W., and Jones, M. R. (submitted). The dynamics of attending: How we track time varying events. *Psychological Review*.

Large, E. W. (invited). A dynamic approach to making decisions and sequencing behaviors. *IEEE Spectrum*.

Patents

Large, E. W. & Kolen, J. F. (allowed). *A method of analysis of signals from nonstationary processes possessing temporal structure such as music, speech, and other event sequences*. Submitted to the US Patent Office, June, 1994, Serial No. 08/254,638.

Journal Articles In Preparation

Large, E. W., and Palmer, C. (in preparation). The temporal response to musical performance: Recovering structure under the influence of temporal fluctuation. To be submitted to *Journal of the Acoustical Society of America*.

Bajcsy, R., Kosecka, J. Christensen, H. I., and Large, E. W. (in preparation). Signal and symbol: The problem of representation in the context of a navigation task. To be submitted to *Artificial Intelligence*.

Refereed Conference Proceedings

Large, E. W. (1997). *Scaling the dynamic approach to path planning*. Proceedings of the IEEE International Symposium on Industrial Electronics, 1997.

Large, E. W., Christensen, H. I., and Bajcsy, R. (1997). *Dynamic path planning on multiple spatial scales*. International Joint Conference on Artificial Intelligence.

Large, E. W., Christensen, H. I., and Bajcsy, R. (1997). *Scaling dynamic planning and control: Cooperation through competition*. IEEE International Conference on Robotics and Automation.

Large, E. W. (1996). *Modeling beat perception with a nonlinear oscillator*. In Proceedings of the Eighteenth Annual Conference of the Cognitive Science Society.

Large, E. W. (1994). *Models of metrical structure in music*. In Proceedings of the Sixteenth Annual Conference of the Cognitive Science Society (pp. 537 - 542). Hillsdale, N.J.:Erlbaum Press.

Large, E. W. (1994). *The resonant dynamics of beat tracking and meter perception*. In Proceedings of the 1994 International Computer Music Conference. Computer Music Association.

Large, E. W., Palmer, C., & Pollack, J. B. (1991). *A connectionist model of intermediate representations for musical structure*. In Proceedings of the Thirteenth Annual Conference of the Cognitive Science Society (pp.412 - 417). Hillsdale, N.J.:Erlbaum Press.

Large, E. W. & Brown, D. C. (1990) Knowledge compilation by analogy: Adaptation of design plans by analogical matching and derivational plan transformation. In J. S. Gero (Ed.) *Applications of AI in Engineering V, Vol. 2: Manufacture and Planning, Proceedings of the Fifth International Conference* (pp. 551 - 571). Berlin: Springer-Verlag.

Takebayashi., Y, Large, E. W., Souma, S., & Doi, M. (1988). *Intelligent presentation graphics using drawing understanding*. In Proceedings of the Fourth Symposium on Human Interface (pp. 477 - 496). In Japanese.

Large, E. W., Souma, S., Doi, M., & Takebayashi., Y. (1988). Architecture for an intelligent presentation graphics system. *37th Spring Meeting of the Information Processing Society of Japan* (pp. 1306 - 1307). In Japanese.

Book Chapters

Large, E. W. & Christensen, H. I. (in press). Dynamics for Robot Path Planning and Control. To appear in H. Bunke (Ed.), *Modeling and Planning for Sensor-Based Intelligent Robot Systems*, Berlin: World Scientific.

Large, E. W., Palmer, C., & Pollack, J. B. (in press). Reduced memory representations for music. To appear in N. Griffith and P. Todd (Eds.), *Musical Networks: Parallel Distributed Perception and Performance*. Cambridge, MA: MIT Press.

Large, E. W., & Kolen, J. F. (in press). Resonance and the perception of musical meter. To appear in N. Griffith and P. Todd (Eds.), *Musical Networks: Parallel Distributed Perception and Performance*. Cambridge, MA: MIT Press.

Brown, D. C., Meehan, E., Sloan, W. N., Horner, R., Large, E., Liu, L., Spillane, M., & Kim, M. (1991). Experiences with modeling memory and simple learning in routine design problem solving. In M. Green (Ed.) *Knowledge Aided Design* (pp. 239-259). London: Academic Press.

Refereed Workshop Proceedings

Large, E. W. (1995). *Beat tracking with a nonlinear oscillator*. In Working Notes of the IJCAI Workshop on AI and Music (pp. 24-31).

Book Reviews

Large, E. W. (in press). Music and schema theory. *Music Perception*.

Abstracts

Large, E. W. (submitted). Categorization of temporal intervals. *Journal of the Acoustical Society of America*.

Large, E. W. & Palmer, C. (1997). Modeling the perception of meter in musical performance. Notes of the *Society for Music Perception and Cognition*. Boston, July.

Large, E. W. & Palmer, C. (1996). Nonlinear dynamics of rhythm perception in performed music. *Journal of the Acoustical Society of America* (p. 2481).

Large, E. W. (1995). Nonlinear dynamics and meter perception in musical performance. Notes of the *Society for Music Perception and Cognition*. Berkeley, June.

Large, E. W., & Kolen, J. F. (1993). *A dynamical model of the perception of metrical structure*. Notes of the Society for Music Perception and Cognition. Philadelphia, June.

Large, E. W. (1992). A neural network model of recoding for musical stimuli. *Journal of the Acoustical Society of America*, 92, (4), 2404.

Other Professional Papers

Large, E. W. (1994). *Dynamic representation of musical structure*. Unpublished Ph.D. Dissertation. The Ohio State University, Columbus, OH.

Large, E. W. (1992). *Judgements of similarity for musical sequences*. Technical Report, Center for Cognitive Science. The Ohio State University, Columbus, OH.

Large, E. W. (1989). Knowledge compilation by analogy: adaptation of design plans by analogical matching and derivational plan transformation. M.S. Thesis, Computer Science Department, Worcester Polytechnic Institute, Worcester, MA.

Invited Talks

Large, E. W. (1997). *A dynamic approach to making decisions and sequencing behaviors*. 5th Symposium on Intelligent Robotics, Stockholm, Sweden.

Large, E. W. (1996). *A Theory of Attentional Dynamics*. Rutgers University. Newark, NJ

Large, E. W. (1996). *Temporal Acuity and Attentional Dynamics*. University of West Florida. Pensacola, FL.

Large, E. W. (1996). *Nonlinear Dynamics for Processing Temporally Complex Sequences*. NEC Research Institute, Princeton, NJ.

Large, E. W. (1995). *Dynamic attention for complex events: Beat tracking and temporal acuity*. MIT Media Lab,

Cambridge, MA.

Large, E. W. (1994). *Dynamic representation of musical structure*. Rhythm Perception and Performance Workshop, Sheffield, England.

Large, E. W. (1993). *Rhythm, representation, and musical discovery*. MAIC Lecture Series, Indiana University, Bloomington, Indiana.

Other Presentations

Large, E. W. (1996). *Robotic decision making and planning using nonlinear dynamics*. Department of Electrical Engineering and Computer Science, University of California at Berkeley, Berkeley, CA.

Large, E. W. (1996). *Robotic decision making and planning using nonlinear dynamics*. Department of Computer Science, Stanford University, Stanford, CA.

Large, E. W. (1996). *A Theory of Attentional Dynamics*. Department of Psychology, University of California at Berkeley, Berkeley, CA.

Large, E. W. (1996). *Scaling the Dynamic Approach to Path Planning: Competition among Task Constraints*. GRASP Lunch, Department of Computer and Information Science, Philadelphia, PA.

Large, E. W. (1996). *Theory of Autonomy: A Case Study in Robot Navigation*. Presentation to NSF Review Panel, Institute for Research in Cognitive Science, University of Pennsylvania, Philadelphia, PA.

Beat Tracking and Temporal Acuity in Dynamic Events Part I: Theory. New England Sequencing and Timing (NEST '96). Brown University, Providence, RI.

Large, E. W. (1995). *Nonlinear dynamics and meter perception in musical performance*. Presented at Society for Music Perception and Cognition. Berkeley, June.

Large, E. W. (1993). *Resonance and the perception of musical meter*. NIPS Workshop on Music and Audition, Neural Information Processing Systems Conference, Denver, Colorado.

Large, E. W. (1993). *Resonance and meter perception*. 4rd Annual Midwest ConnectFest, Indiana University, Bloomington, Indiana.

Large, E. W. (1992). *Temporal structure and temporal sequence processing*. 3rd Annual Midwest ConnectFest, Carnegie Mellon University, Pittsburgh, Pennsylvania.

Large, E. W. (1992). *Dynamic programming for the analysis of serial behaviors*. Psychonomics Society, St. Louis, Missouri.

Large, E. W. (1991). *Representing musical structure*. 2nd Annual Midwest ConnectFest, The Ohio State University, Columbus, Ohio.

Large, E. W. (1990). *Representing melodic sequences using RAAM networks*. 1st Annual Midwest ConnectFest, Indiana University, Bloomington, Indiana.

References

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