

Professor E R Miranda - Publications as of 07 June 2010

The list is organized tentatively by areas of research.

All papers have been appropriately peer-reviewed, unless otherwise stated.

1 Music Neurotechnology / Music and the Brain

Book Chapters

Durrant, S. and Miranda E. R. (to appear). "Neuroscience of Music: Progress, Challenges and Caveats", T. Klouche (Ed.), *Mathematical and Computational Musicology*. Heidelberg: Springer.

Westerman, G. and Miranda, E. R. (2002). "Integrating Perception and Production in a Neural Network Model". In J. A. Bullinaria and W. Lowe (Eds.), *Connectionist Models of Cognition and Perception, Progress in Neural Processing Vol. 14*. London: World Scientific.

Journal Papers

Durrant, S., Hardoon, D. R., Brechmann, A., Shawe-Taylor, J., Miranda, E. R., Scheich, H., (2009). "GLM and SVM analyses of neural response to tonal and atonal stimuli: new techniques and a comparison", *Connection Science*, Vol. 2, No. 1, pp. 161-175.

Miranda, E. R. (2010). "Organised Sound, Mental Imageries and the Future of Music Technology: A Neuroscience Outlook", *Organised Sound*, 15(1):13-25.

Miranda, E. R. and Matthias, J. (2009). "Music Neurotechnology for Sound Synthesis", *Leonardo*, Vol. 42, No. 5, pp. 439-442.

Miranda, E. R., Bull, L., Gueguen, F., Uroukov, I. S. (2009). "Computer Music Meets Unconventional Computing: Towards Sound Synthesis with In Vitro Neuronal Networks", *Computer Music Journal*, Vol. 33, No. 1, pp- 9-18.

Miranda, E. R. (1998). "Music, Machines, Intelligence and the Brain", *Journal of Electroacoustic Music*, Vol. 12, pp. 32-33.

Westerman, G. and Miranda, E. R. (2003). "Modelling the Development of Mirror Neurons for Auditory-Motor Integration", *Journal of New Music Research*, Vol. 31, No. 4, pp. 367-375.

Westerman, G. and Miranda, E. R. (2003). "A New Model of Sensorimotor Coupling in the Development of Speech", *Brain and Language*, Vol. 82, No. 2, pp.393-400.

Conference Proceedings

- Brechmann, A., Durrant, S., Scheich, H. and Miranda, E. R. (2008). "Activation in auditory cortex correlates with the distance of musical key change", Proceedings of 6th Forum of the Foundation of European Neuroscience Societies, FENS - Abstract Vol. 4, Geneva, Switzerland.
- Durrant, S., Miranda, E. R., Brechmann, A. and Scheich, H. (2008). "Cortical Processing of Tonality". Poster presented at The Neurosciences and Music III, 25-28 June, McGill University, Montreal.
- Durrant, S., Miranda, E. R., Hardoon, D., Shawe-Taylor, J., Brechmann, A. and Scheich, H. (2007). "Neural Correlates of Tonality in Music", Proceedings of Music, Brain & Cognition Workshop - NIPS Conference, Whistler, Canada.
- Grant, J., Matthias, J., Hodgson, T. and Miranda, E. (2008). "Hearing Thinking", Poster presented at EvoMUSART - Sixth European Workshop on Evolutionary and Biologically Inspired Music, Sound, Art and Design, Napoli, Italy.
- Knast, A., Miranda, E. R. and Denham, S. (2007). "Commonalities between F2 distribution and musical timbre", Poster presented at Language and Music as Cognitive Systems Conference, 11-13 May, Cambridge, UK.
- Martins, J. M. and Miranda, E. R. (2005). "Societies of rhythmic agents: A neural representation of rhythm", Proceedings of the 10th Rhythm Perception and Production Workshop (RPPW2005), Bilzen, Belgium. (Not peer-reviewed)
- McCracken, K., Matthias, J., and Miranda, E. R. (2010). "Neurogranular Synthesis: Granular Synthesis Controlled by a Pulse-Coupled Network of Spiking Neurons". Submitted to conference.
- Miranda, E. R. (2007). "A Neurotechnology Approach to the Analysis of Electroacoustic Music: A Proposition". Proceedings of AHRC ICT Methods Network Workshop, De Montfort University, Leicester, UK, 12 June 2007. (Invited Talk; Not peer-reviewed)
- Miranda, E. R. and Matthias, J. (2005). "Granular Sampling using a Pulse-Coupled Network of Spiking Neurons", Proceedings of EvoWorkshops 2005, Lecture Notes in Computer Science 3449, pp. 539-544. Berlin: Springer-Verlag.
- Murray, J., Miranda, E. R., and Matthias, J. (2006). "Real-time granular synthesis with spiking neurons", Proceedings of Conscious Reframed - 8th International Conference, University of Plymouth, Plymouth, UK.

2 Performance and Interaction

Books

- Miranda, E. R. and Wanderley, M. M. (2006). *New Digital Musical Instruments: Control and Interaction beyond the Keyboard*. Middleton, WI: A-R Editions.

Journal Papers

- Costalonga, L. L. and Miranda, E. R. (2006). "Idiomatic guitar synthesis". Journal of Acoustic Society of America, Vol. 119, No. 5, pp. 3441. (Abstract for 151st Meeting of ASA 2006)
- Kirke, A. and Miranda, E. R. (2009). "A Survey of Computer Systems for Expressive Music Performance." ACM Computing Surveys, Vol. 34, No. 1, Article 3.
- Miranda, E. R., Kirke, A., Zhang, Q. (2010). "Artificial Evolution of Expressive Performance of Music: An Imitative Multi-Agent Systems Approach", Computer Music Journal, 34(1):80-96.

Conference Proceedings

- Costalonga, L. and Miranda, E. R. (2008). "Equipping Artificial Guitar Players with Biomechanical Constraints: A Case Study of Precision and Speed", Proceedings of International Computer Music Conference - (ICMC2008), Belfast, UK.
- Costalonga, L., Miranda, E. and Miletto, E. (2007). Octopus Music API: Modelling Musical Performance. Proceedings of SBCM 2007, Sao Paulo, Brazil.
- Costalonga, L., Miranda, E. R., Viccari, R. M. and Matthias, J. (2006). "An Idiomatic Plucked String Player", Proceedings of the International FLAIRS Conference - Special Track: Artificial Intelligence in Music and Art, Miami, USA.
- Coutinho, E., Miranda, E. R., and da Silva, P. (2005). "Evolving Emotional Behaviour for Expressive Performance of Music", Proceedings of Intelligent Virtual Agents 2005 (LNCS 3661 - 0497), Kos, Greece.
- Coutinho, E. Miranda, E. R. and Cangelosi, A. (2005). "Towards a Model for Embodied Emotions", Proceedings of the Workshop on Affective Computing: Towards Affective Intelligent Systems (AC 2005), Covilhã, Portugal.
- Hapipis, A. and Miranda, E. R. (2005). "Artificial Singing with a Webcam Mouth-Controller", Proceedings of Sound and Music Computing 05, Salerno, Italy.
- Kirke, A. and Miranda, E. R. (2008). "An Instance Based Model for Generating Expressive Performance During Composition", Proceedings of International Computer Music Conference - (ICMC2008), Belfast, UK.
- Kirke, A. and Miranda, E. R. (2008). "COMPER: Towards a Model for Generating Compositions from Expressive Music Performances", Proceedings of International Computer Music Conference - (ICMC2008), Belfast, UK.
- Livingstone, D. and Miranda, E. (2005). "Orb3 Adaptive Interface Design for Real time Sound Synthesis & Diffusion within Socially Mediated Spaces", Proceedings of the 5th International Conference on New Instruments for Musical Expression (NIME'05), Vancouver, Canada.
- Zhang, Q. and Miranda, E. R. (2006). "Towards an Interaction and Evolution Model of

Expressive Music Performance ”, Proceedings of the Sixth International conference on Intelligent Systems Design and Applications (ISDA2006), Jinan, China.

Zhang, Q. and Miranda, E. R. (2006). “Evolving Musical Performance Profiles using Genetic Algorithms with Structural Fitness”, Proceedings of Genetic and Evolutionary Computation Conference (GECCO 2006), Seattle, USA.

3 Brain-Computer Music Interface

Journal Papers

Miranda, E. R. (2010). “Plymouth brain-computer music interfacing project: from EEG audio mixers to composition informed by cognitive neuroscience”, International Journal of Arts and Technology, 3(2/3):154-176.

Miranda, E. R. (2006). "Brain-Computer music interface for composition and performance", International Journal on Disability and Human Development, 5(2):119-125.

Miranda, E. R. and Brouse, A. (2005). "Interfacing the Brain Directly with Musical Systems: On developing systems for making music with brain signals ", Leonardo, 38(4):331-336.

Miranda, E. R., Roberts, S. and Stokes, M. (2004). "On Generating EEG for Controlling Musical Systems", Biomedizinische Technik, 49(1):75-76.

Miranda, E. R., Sharman, K., Kilborn, K., Duncan, A. (2003). "On Harnessing the Electroencephalogram for the Musical Braincap", Computer Music Journal, Vol. 27, No. 2, pp. 80-102.

Conference Proceedings

Brooks, A., Eaglestone, B., Ellis, P., Gehlhaar, R., Girao, L. M., Magee, W., Miranda, E., Peterson, E. and Rodrigues, P. (2007). "Non-Formal Rehabilitation via Immersive Interactive Music Environments", Proceedings of International Computer Music Conference (ICMC 2007), Copenhagen (Denmark).

Miranda, E. R., Durrant, S. and Anders, T. (2008). "Towards Brain-Computer Music Interfaces: Progress and Challenges", Proceedings of International Symposium on Applied Sciences in Bio-Medical and Communication Technologies (ISABEL2008), Aalborg, Denmark.

Miranda, E. R. and Soucayet, V. (2008). "Mix-It-Yourself with a Brain-Computer Music Interface", Proceedings of 7th ICDVRAT with ArtAbilitation. Maia/Porto, Portugal.

Miranda, E. R. (2006). "Brain-Computer Interface for Generative Music", Proceedings

of International Conference Series on Disability, Virtual Reality and Associated Technologies (ICDVRAT 2006), Esbjerg, Denmark.

Miranda, E. R. and Boskamp, B. (2005). "Steering Generative Rules with the EEG: An Approach to Brain-Computer Music Interfacing", Proceedings of Sound and Music Computing 05, Salerno, Italy.

Miranda, E. R. and Brouse, A. (2005). "Toward Direct-Computer Musical Interfaces", Proceedings of the 5th International Conference on New Instruments for Musical Expression (NIME'05), Vancouver, Canada.

Miranda, E. R., Brouse, A., Boskamp, B. and Mullaney, H. (2005). "Plymouth Brain-Computer Music Interface Project: Intelligent Assistive Technology for Music-Making", Proceedings of the International Computer Music Conference 2005, Barcelona, Spain.

Zhang, Q. and Miranda, E. R. (2008). "Multi-Agent Simulation for Generating Expressive Music Performance", Proceedings of World Congress on Social Simulation (WCSS2008), Fairfax, USA.

4 Computer-Aided Composition

Books

Miranda, E. R. (2001). *Composing Music with Computers*. Oxford, UK: Elsevier – Focal Press. (Reprinted 2004)

Book Chapter

Miranda, E. R. (2005). "On Making Music with Artificial Life Models", In *Engineering Nature: Art and Consciousness in the Post-Biological Era*, R. Ascott (Ed.). Bristol, UK: Intellect.

Journal Papers

Anders, T. and Miranda, E. R. (2010). "A Survey of Constraint Programming Systems for Modelling Music Theories and Composition", *ACM Computing Surveys*, XX(X):Article x. (to appear)

Anders, T. and Miranda, E. R. (2010). "Constraint Application with Higher-Order Programming for Modeling Music Theories", *Computer Music Journal*, 34(2):25-38.

Anders, T. and Miranda, E. R. (2009). "Interfacing Manual and Machine Composition". *Contemporary Music Review*, 28(2):133-147.

Miranda, E. R. (2005). "Artificial Phonology: On Synthesising Disembodied Humanoid Voice for Composing Music with Surreal Languages", *Leonardo Music Journal*, Vol. 15, pp. 8-16.

- Miranda, E. R., McAlpine, K. and Hoggar, S. (1999). "Making Music with Algorithms: A Case Study", *Computer Music Journal*, Vol. 23, No. 2, pp. 19-30.
- Miranda, E. R. (1998). "The Role of Speech Synthesis in Requiem per una veu perdudua", *Organised Sound*, Vol. 3, No. 3, pp. 235-240.
- Miranda, E. R. (1994). "The Role of Artificial Intelligence in Computer-Aided Sound Composition", *Journal of Electroacoustic Music*, Vol. 8, pp. 7-11.
- Miranda, E. R. (1994). "Music composition using cellular automata", *Languages of Design*, Vol. 2, pp. 105-117.
- Miranda, E. R. (1993). "Cellular Automata Music: An Interdisciplinary Project", *Interface*, Vol. 22, No. 1, pp. 3-21.
- Wiggins, G., Miranda, E. R., Smaill, A. and Harris, M. (1993). "A Framework for the Evaluation of Music Representation Systems", *Computer Music Journal*, pp. 31-42.

Conference Proceedings

- Anders, T., Miranda, E. R. (2009). "A Computational Model that Generalises Schoenberg's Guidelines for Favourable Chord Progressions", In 6th Sound and Music Computing Conference. Porto, Portugal.
- Alvaro, J., Miranda, E., and Barros, B. (2006). "Music Knowledge Analysis: Towards an Efficient Representation for Composition", *Proceedings of the 11th Conference of the Spanish Association for Artificial Intelligence (CAEPIA 05)*, Santiago de Compostela, Spain. Heidelberg: Springer.
- Alvaro, J. A., Miranda, E. R. and Barros, B. (2005). "Representación del Conocimiento para la Composición Musical", *Proceedings of 11th Conference of the Spanish Association for Artificial Intelligence*, Santiago de Compostela, Spain.
- Alvaro, J. Miranda, E. and Barros, B. (2005). "EV Ontology: Multilevel Knowledge Representation and Programming", *Proceedings of the 10th Brazilian Symposium on Computer Music (SBCM)*, Belo Horizonte, Brazil.
- Anders, T., and Miranda, E. R. (2009). "A Computational Model that Generalises Schoenberg's Guidelines for Favourable Chord Progressions", *Proceedings of Sound and Music Computing (SMC 2009)*, Porto, Portugal.
- Anders, T. and Miranda, E. R. (2008). "Constraint-Based Composition in Realtime", *Proceedings of International Computer Music Conference - (ICMC2008)*, Belfast, UK.
- Anders, T. and Miranda, E. R. (2008). "Higher-Order Constraint Applications for Music Constraint Programming", *Proceedings of International Computer Music Conference - (ICMC2008)*, Belfast, UK.
- Gimenes, M., Miranda, E. R. and Johnson, C. (2005). "On the Learning Stages of an

Intelligent Rhythmic Generator", Proceedings of Sound and Music Computing 05, Salerno, Italy.

Livingstone, D. and Miranda, E. (2005). "ORB3 - Musical Robots within an Adaptive Social Composition System", Proceedings of the International Computer Music Conference 2005, Barcelona, Spain.

Livingstone, D. and Miranda, E. R. (2004). "Composition for Ubiquitous Responsive Environments", Proceedings of the International Computer Music Conference, Miami, USA.

Miranda, E. R. and Tikhonoff, V. (2005). "Musical Composition by an Autonomous Robot: An Approach to AIBO Interaction", Proceedings of TAROS 2005 - Towards Autonomous Robotic Systems, London, UK.

Miranda, E. R. and Zhang, Q. (2005). "Composition As Game Strategy: Making Music by Playing Board Games Against Evolved Artificial Neural Networks", Proceedings of the International Computer Music Conference 2005, Barcelona, Spain.

Miranda, E. R. and Todd, P. M. (2003). "A-Life and Musical Composition: A Brief Survey", IX Brazilian Symposium on Computer Music: Music as Emergent Behaviour, UNICAMP, Campinas, Brazil.

Miranda, E. R. (1997). "Who composed Entre l'Absurde et le Mystère?", Proceedings of the XVII Annual Congress of the Brazilian Computing Society / IV Brazilian Symposium on Computer Music, Brasília, Brazil.

Miranda, E. R. (1996). "Computer-Assistance in Concept Formation and Musical Invention", Proceedings of the International Computer Music Conference (ICMC96), Hong Kong, China.

Miranda, E. R. (1996). "Machine Learning and Musical Invention: A Case Study", Proceedings of the 7th International Symposium on Electronic Arts (ISEA), Rotterdam, The Netherlands.

Rutz, H. H., Miranda, E. R., Eckel, G. (2010). "On the Traceability of the Compositional Process", Proceedings of Sound and Music Computing (SMC2010), Barcelona, Spain.

Serquera, J. and Miranda, E. R. (2010). "Algorithmic Sound Composition using Coupled Cellular Automata", Proceedings of 3rd Chaotic Modeling and Simulation International Conference (CHAOS2010), Chania, Crete (Greece).

Smill, A., Wiggins, G. and Miranda, E. R. (1993). "Music Representation: Between the Musician and the Computer", Proceedings of Artificial Intelligence in Music Education Workshop / World Conference on Artificial Intelligence in Education, Edinburgh, UK.

Wooller, R., Brown, A., Diederich, J., Miranda, E. R. and Berry, R. (2005). "A

framework for comparison of process in algorithmic music systems", Proceedings of the Generative Arts Practice - A Creativity & Cognition Symposium, Sydney, Australia.

5 Evolutionary Computer Music

Books

Miranda, E. R. (2010). *A-Life for Music: Music and Computer Models of Living Systems*. Middleton (WI): A-R Editions. Includes music CD. (in press)

Miranda, E. R. and Biles, J. A. (Eds.) (2007). *Evolutionary Computer Music*. London: Springer.

Book Chapters

Kirke, A. and Miranda, E. R., (to appear). "Artificial Social Composition: A Multi-Agent System for Composing Music Performances by Emotional Communication", T. Klouche (Ed.) *Mathematical and Computational Musicology*. Heidelberg: Springer.

Miranda, E. R. and Kirke, A. (2010). "Game of Life Music", A. Adamatzky (Ed.), *Game of Life Cellular Automata*. London: Springer-Verlag, pp. 489-501.

Miranda, E. R. (2005). "Musique de la Vie Artificiel", L. Poissant (Ed.), *Art et Biotechnologies*. Montreal, Canada: Presses de l'Universite du Quebec. [in French].

Todd, P. and Miranda, E. R. (2006). "Putting some (artificial) life into models of musical creativity", I. Deliege and G. Wiggins (Eds.), *Musical creativity: Multidisciplinary research in theory and practice*. London, UK: Psychology Press.

Journal Papers

Bilotta, E., Miranda, E. R., Pantano, P and Todd, P. (2002). "Artificial Life for Musical Applications: Workshop Report", *Artificial Life*, Vol. 8, No. 1, pp. 83-86.

Kirke, A., Miranda, E.R. (2007). "Capturing the Aesthetic: Radial Mappings for Cellular Automata Music". *Journal of the ITC Sangeet Research Academy*, Vol. 21, pp. 15-23.

Martins, J. and Miranda, E. R. (2008). "Engineering the Role of Social Pressure: A New Artificial Life Approach to Software for Generative Music". *Journal on Software Engineering*, Vol. 2, No. 3, pp.31-42.

Miranda, E. R. (2010). "Contextualizing Eighteenth Century Enlightenment Through the Lenses of Contemporary Science", *Physics of Life Reviews*, 7:35-36.

Miranda, E. R. (2008). "Emergent Songs by Social Robots", *Journal of Experimental*

and Theoretical Artificial Intelligence. Vol. 20, No. 4, pp. 31-42.

Miranda, E. R. (2004). "At the Crossroads of Evolutionary Computation and Music: Self-Programming Synthesizers, Swarm Orchestras and the Origins of Melody", *Evolutionary Computation*, Vol. 12, No. 2, pp. 137-158.

Miranda, E. R. (2003). "On the Music of Emergent Behaviour: What can Evolutionary Computation Bring to the Musician?", *Leonardo*, Vol. 36, No. 1, pp. 55-58.

Miranda, E. R. (2003). "On the evolution of music in a society of self-taught digital creatures", *Digital Creativity*, Vol. 14, No. 1, pp. 29-42.

Miranda, E. R., Kirby, S. and Todd, P. (2003). "On Computational Models of the Evolution of Music: From the Origins of Musical Taste to the Emergence of Grammars", *Contemporary Music Review*, Vol. 22, No. 3, pp. 91-111.

Miranda, E. R. (2003). "On the Music of Emergent Behaviour: What can Evolutionary Computation Bring to the Musician?", *Leonardo*, Vol. 36, No. 1, pp. 55-58.

Miranda, E. R. (2002). "Emergent Sound Repertoires in Virtual Societies", *Computer Music Journal*, Vol. 26, No. 2, pp. 77-90.

Miranda, E. R. (2000). "On the Origins and Evolution of Music", *Electronic Musicological Review*, Vol. 5.

Miranda, E. R. (1999). "Sobre as Origens e a Evolução da Música", *Scientia*, Vol. 10, No. 1, pp.5-33. (in Portuguese)

Conference Proceedings

Burraston, D., Edmonds, E., Livingstone, D. and Miranda, E. R. (2004). "Cellular Automata in MIDI based Computer Music", *Proceedings of the International Computer Music Conference*, Miami, USA.

Coutinho, E., Gimenes, M., Martins, J. and Miranda, E. R. (2005). "Computational Musicology: An Artificial Life Approach", *Proceedings of the 2nd Portuguese Workshop on Artificial Life and Evolutionary Algorithms Workshop*, Covilhã, Portugal.

Gimenes, M. and Miranda, E. R. (2008). "An A-Life Approach to Machine Learning of Musical Worldviews for Improvisation Systems", *Proceedings of 5th Sound and Music Computing Conference*, Berlin, Germany.

Gimenes, M., Miranda, E. R. and Johnson, C. (2007). "The Emergent Musical Environments: An Artificial Life Approach", *Proceedings of ECAL 2007 Workshop on Music and Artificial Life (MusicAL 2007)*, Lisbon, Portugal.

Gimenes, M., Miranda, E. R., and Johnson, C. (2007). "Musicianship for Robots with Style". *Proceedings of New Interfaces for Musical Expression (NIME 2007)*, New York, USA.

Gimenes, M., Miranda, E. R. and Johnson, C. (2006). "The development of musical

styles in a society of software agents", Proceedings of the International Conference on Music Perception and Cognition, Bologna, Italy.

Gi Mendes, M., Miranda, E. R. and Johnson, C. (2005). "A Memetic Approach to the Evolution of Rhythms in a Society of Software Agents", Proceedings of the 10th Brazilian Symposium on Computer Music (SBCM), Belo Horizonte, Brazil.

Kirke, A., Miranda, E.R. (2007). "Evaluating Mappings for Cellular Automata Music", Proceedings of ECAL 2007 Workshop on Music and Artificial Life (MusicAL 2007), Lisbon, Portugal.

Martins, J. and Miranda, E. R. (2008). "Breeding Rhythms with Artificial Life", Proceedings of 5th Sound and Music Computing Conference, Berlin. Germany.

Martins, J. and Miranda, E. R. (2007). "Emergent rhythmic phrases in an A-Life environment", Proceedings of ECAL 2007 Workshop on Music and Artificial Life (MusicAL 2007), Lisbon, Portugal.

Martins, J. M. and Miranda, E. R. (2006). "A Connectionist Architecture for the Evolution of Rhythms", Proceedings of EvoWorkshops 2006, Budapest, Hungary. Lecture Notes in Computer Science, Berlin: Springer-Verlag,

Miranda, E. R. (2008). "Autonomous Development of Singing-Like Intonations by Interacting Babbling Robots", Proceedings of International Computer Music Conference - (ICMC2008), Belfast, UK.

Miranda, E. R. and Drouet, E. (2006). "Evolution of Musical Lexicons by Singing Robots" Proceedings of TAROS 2006 Conference - Towards Autonomous Robotic Systems, Surrey University, Gilford, UK.

Miranda, E. R. (2004). "Artificial Life and the Evolution of Music", Proceedings of International Symposium on Music & Science, Coimbra (Portugal). (Invited keynote; not peer-reviewed)

Miranda, E. R. (2003). "Musical Applications of Evolutionary Computing: From Sound Design to Evolutionary Musicology", Proceedings of Colloquium Past, Present and Future of Technology in Music, IPREM - Dept. of Musicology, Ghent University, Ghent (Belgium), pp. 40-53. (Invited keynote; not peer-reviewed)

Miranda, E. R. (2002). "Mimetic Development of Intonation". In C. Anagnostopoulou, M. Ferrand and A. Smaill (Eds.), Proceedings of the 2nd International Conference on Music and Artificial Intelligence, Edinburgh, UK.

Miranda, E. R. (2002). "Voices of Artificial Life: On Making Music with Computer Models of Nature", Proceedings of the International Computer Music Conference (ICMC2002), Göteborg, Sweden.

Miranda, E. R. (2002). "Sounds of Artificial Life", Proceedings of the ACM SIGCHI International Conference on Creativity and Cognition, Loughborough, UK.

Miranda, E. R. (1999). "Modelling the Evolution of Complex Sounds", Proceedings of the AISB'99 Symposium on Creative Evolutionary Systems, Edinburgh, UK.

Miranda, E. R. (1999). "Exploring the musical potential of digital life-forms", Proceedings of the 1999 Australasian Computer Music Conference, Wellington, New Zealand.

Zhang, Q. and Miranda, E. R. (2007). "Evolving Expressive Music Performance through Interaction of Artificial Agent Performers", Proceedings of ECAL 2007 Workshop on Music and Artificial Life (MusicAL 2007), Lisbon, Portugal.

6 Sound Synthesis

Books

Miranda, E. R. (2002). Computer Sound Design: Synthesis Techniques and Programming. Oxford, UK: Elsevier - Focal Press. (Reprinted 2005)

Book Chapters

Miranda, E. R. (2009). "Digital Sound Synthesis for Multimedia Audio", B. Wah (Ed.), Encyclopedia of Computer Science and Engineering. Hoboken, NJ: John Wiley & Sons.

Serquera, J. and Miranda, E. R. (2008). "Cellular automata sound synthesis: From histograms to spectrograms". In A. Adamatzky et al. (Eds.), Automata 2008: Theory and Applications of Cellular Automata. Frome, UK: Luniver Press.

Journal Papers

Miranda, E. R., and Maia Jr., A. (2007). "Spectral Fuzzy Sets and Markov Streaming for Granular Synthesis of Sound", Symmetry: Culture and Science, Vol. 18, Nos. 2-3, pp. 223-241.

Miranda, E. R., Correa, J. S., Wright, J. (2000). "Categorising Complex Dynamic Sounds", Organised Sound, Vol. 5, No. 2, pp. 95-102.

Miranda, E. R. (1997). "Machine Learning and Sound Design: A Case Study", Leonardo Music Journal, Vol. 7, pp. 49-55.

Miranda, E. R. (1995). "An Artificial Intelligence Approach to Sound Design", Computer Music Journal, Vol. 19, No. 2, pp. 59-75.

Miranda, E. R. (1995). "Granular Synthesis of Sounds by means of a Cellular Automaton", Leonardo, Vol. 28, No. 4, pp. 297-300.

Miranda, E. R. (1995). "Cellular Automata Synthesis of Acoustic Particles", Supercomputer, No. 56, pp. 16-23.

Miranda, E. R. (1994). "From Symbols to Sound: AI-based Investigation of Sound Synthesis", Contemporary Music Review, Vol. 10, No. 2, pp. 211-232.

Valsamakis, N. and Miranda, E. R. (2005). "Iterative Sound Synthesis by means of Cross-Coupled Digital Oscillators", *Digital Creativity*, Vol. 16, No. 2, pp. 79-92.

Conference Proceedings

Martins, J. M., Pereira, F., Miranda, E. R. and Cardoso, A. (2004). "Enhancing Sound Design with Conceptual Blending of Sound Descriptors", *Proceedings of the Workshop on Computational Creativity (CC'04) - European Conference on Case-Based Reasoning (ECCBR)*, Technical Report 142-04, pp. 243-255, Universidad Complutense de Madrid, Spain.

Miranda, E. R. and Maia Jr., A. (2005). "Granular Synthesis of Sounds Through Markov Chains with Fuzzy Control", *Proceedings of the International Computer Music Conference 2005*, Barcelona, Spain.

Miranda, E. R., Manzolli, J. and Maia Jr, A. (2005). "Granular Synthesis of Sounds through Fuzzyfied Markov Chains", *Proceedings of IX National Convention of the Audio Engineering Society*, Sao Paulo, Brazil.

Miranda, E. R. (2001). "Computer-Aided Song Design: Prosody as Scaffolding", *Proceedings of the VIII Brazilian Symposium on Computer Music*, Fortaleza, Brazil.

Miranda, E. R. (2001). "Evolving Cellular Automata Music: From Sound Synthesis to Composition", *Proceedings of the Workshop on Artificial Life Models for Musical Applications / European Conference on Artificial Life*, Prague, Czech Republic.

Miranda, E. R. (2001). "Improved Synthesis of Ultra-Linguistic Utterances", *Proceedings of 11th SONY Research Forum*, Tokyo, Japan.

Miranda, E. R. (2000). "The Art of Rendering Sounds from Emergent Behaviour: Cellular Automata Granular Synthesis", *Proceedings of 26th EUROMICRO Conference*, Maastricht, The Netherlands.

Miranda, E. R. (1999). "A Phase Vocoder Model of the Glottis for Expressive Voice Synthesis", *Proceedings of 9th SONY Research Forum*, Tokyo, Japan.

Miranda, E. R. (1995). "Chaosynth: Um sistema que utiliza um autômato celular para sintetizar partículas sônicas", *Proceedings of the II Brazilian Symposium on Computer Music*, Canela, Brazil.

Miranda, E. R. (1995). "Cellular Automata Synthesis of Acoustic Particles", *Proceedings of the International Computer Music Conference (ICMC95)*, Banf, Canada.

Miranda, E. R. (1995). "Artist: an AI-based tool for sound design", *Proceedings of Journées d'Informatique Musicale (JIM95)*, Paris France.

Miranda, E. R. (1994). "ARTIST: an AI-based tool for the design of intelligent assistants to sound synthesis", *Proceedings of the I Brazilian Symposium on Computer Music*, Caxambú, Brazil.

- Miranda, E. R. (1993). "Cellular Automata Music Composition: a Bio-logical Inspiration", Proceedings of the 4th International Symposium on Electronic Arts, Minneapolis, USA.
- Miranda, E. R. (1993). "A knowledge-based approach for the design of intelligent musical synthesisers", Proceedings of the X Brazilian Symposium on Artificial Intelligence, Porto Alegre, Brazil.
- Serquera, J. and Miranda, E. R. (2010). "Evolutionary Sound Synthesis: Rendering Spectrograms from Cellular Automata Histograms", Proceedings of 8th European event on Evolutionary and Biologically Inspired Music, Sound, Art and Design (EvoMUSART 2010), Istanbul, Turkey.
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