

Curriculum Vitae of Mark T. Marshall

Personal Information

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Dublin 4,
Ireland.

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Education

- 01/2005–05/2009 **Ph.D. Music Technology (*Graduation May 2009*)**,
McGill University, Montreal, QC, Canada.
Thesis Title: Physical Interface Design for Digital Musical Instruments.
Supervisor: Prof. Marcelo M. Wanderley.
- 09/2001–09/2004 **M.Sc. Computer Science**,
University of Limerick, Ireland.
Thesis Title: A System for Two-handed Gesture Control of Interactive Applications.
Supervisor: Mikael Fernström.
- 09/1997–05/2001 **B.Sc. Computer Systems**,
University of Limerick, Ireland.
Degree Project: DevLin - An Integrated C++ Development Environment for Linux.
Supervisor: Mikael Fernström.

Research Experience

- 01/2006–09/2008 **Research Assistant: Gesture-controlled Sound Spatialization Project**,
Joint NSERC/CCA funded project for realtime gesture control of sound spatialization
in live concert performances.
- Development of new interfaces and control systems to allow musicians to directly control
spatialization of sound during a live performance.
- 01/2006–09/2008 **Research Assistant: The McGill Digital Orchestra**,
A research/creation project supported by the Appui la recherche-cr ation program of the
Fonds de recherche sur la soci et  et la culture (FQRSC) of the Quebec government.
- Development of new digital musical instruments for concert performance.
- 04/2004–08/2004 **Technical Consultant: SHAPE project**,
An EU-funded project on interaction with computers in public spaces.
- Development of interactive systems for use in the Hunt Museum in Limerick, Ireland.

01/2003–09/2004 **Technical Coordinator: Visibreath project**,
Enterprise Ireland Research Innovation Fund IF/2002/313.
Project Leader: Mikael Fernstrom.

Development of a bi-directional breath sensor device for use by asthmatic children.

06/2001–01/2003 **Research Assistant: Sounding Object project**,
EU FET activity of IST research program.
Project Leader: Davide Rocchesso.

Creation of gesture-based control systems for manipulation of virtual sound objects.

Teaching Experience

Music and the Internet (Undergraduate Level), Lecturer, Spring 2007

Music and Audio Computing (Undergraduate Level), Lecturer, Autumn 2005

Digital Signal Processing (Undergraduate Level), Teaching Assistant, Spring 2004

Programming Languages (Graduate Level), Teaching Assistant, Autumn 2002 - Spring 2004

Software Process Improvement (Undergraduate Level), Teaching Assistant, Spring 2002

Research Interests

Gesture and gesture-based interaction for computer systems.

Sensor design and the use of sensors in creating meaningful interactions.

Interaction methods and interface design.

Patents and Disclosures

M. Fernstrom, M. Lennon, M. Marshall, A Fluid Monitoring Device, Irish Short Term Patent S2000/0951, November 2000.

M. Fernstrom, M. Lennon, M. Marshall, A device for converting a characteristic of a flowing fluid into electronic signal and a respiratory monitor for monitoring fluid flow, PCT Patent Application, PCT/IE/01/00145, 2001.

April 2, 2009

Publications List for Mark T. Marshall

Ph.D. Thesis

Mark T. Marshall: **Physical Interface Design for Digital Musical Instruments**. Ph.D. Thesis, McGill University. Available May 2009.

Journal Publications

Mark T. Marshall, Max Hartshorn, Marcelo M. Wanderley and Daniel J. Levitin: **Sensor Choice for Parameter Modulations in Digital Musical Instruments: Empirical Evidence from Pitch Modulation**. To appear in the Journal of New Music Research, 2009.

Revised Proceedings

Mark T. Marshall, Joseph Malloch, and Marcelo M. Wanderley: **Gestural Control of Sound Spatialization for Live Musical Performance**. In M. S. Dias, S. Gibet, M M. Wanderley and R. Bastos (Eds.): *Gesture-Based Human-Computer Interaction and Simulation - 7th International Gesture Workshop, GW 2007, Lisbon, Portugal, May 23-25, 2007, Revised Selected Papers*. LNCS series Vol. 5085, Springer Verlag, 2009.

Mark T. Marshall and Marcelo M. Wanderley: **Evaluation of Sensors as Input Devices for Computer Music Interfaces**. In R. Kronland-Martinet, T. Voinier, and S. Ystad (Eds.): *CMMR 2005 - Proc. of Computer Music Modeling and Retrieval 2005 Conference*, LNCS 3902. Berlin Heidelberg: Springer-Verlag, pp. 130-139, 2006.

Conference Publications

Xenia Pestova, Mark T. Marshall and Jacob Sudol: **Analogue To Digital: Authenticity vs. Sustainability in Stockhausen's Mantra (1970)**, in Proc. of the 2008 International Computer Music Conference (ICMC08), Belfast, Northern Ireland, 2008.

Georgios Marentakis, Joe Malloch, Nils Peters, Mark Marshall, Marcelo Wanderley and Stephen McAdams: **Influence of performance gestures on the identification of spatial sound trajectories in a concert hall**, in Proc. of the The 14th International Conference on Auditory Display (ICAD08), Paris, France, 2008.

Mark T. Marshall, Joseph Malloch and Marcelo M. Wanderley: **Non-Conscious Control of Sound Spatialization**, in Proc. of the 4th International Conference on Enactive Interfaces (ENACTIVE07), Grenoble, France, pp. 377-380, 2007.

M.T. Marshall, N. Peters, A.R. Jensenius, J. Boissinot, M.M. Wanderley and J. Braasch: **On the Development of a System for the Gesture Control of Spatialization**, In: Proc. of the International Computer Music Conference 2006 (ICMC06), New Orleans, U.S.A., pp. 360-266, 2006.

Mark T. Marshall and Marcelo M. Wanderley: **Vibrotactile Feedback in Digital Musical Instruments**. In Proceedings of the 2006 International Conference on New Interfaces for Musical Expression (NIME06), Paris, France, pp 226-229, 2006.

M. Marshall: **Virtual Sculpture - Gesture Controlled System for Artistic Expression**, Proceedings of the AISB 2004 COST287-ConGAS Symposium on Gesture Interfaces for Multimedia Systems, Leeds, UK, pp 58-63, 2004.

R. Bresin, S. Dahl, M. Marshall, M. Rath and B. Moynihan: **Controlling the virtual bodhran - the vodhran**, in Proceedings of the 2003 Stockholm Music Acoustics Conference (SMAC03), Stockholm, Sweden, pp 685-688, 2003.

M. Marshall, B. Moynihan and M. Rath: **The Virtual Bodhran - Design and Development of a Virtual Musical Instrument**, in Proceedings of the 2002 International Computer Music Conference (ICMC02), Goteborg, Sweden, 2002.

M. Marshall, B. Moynihan and M. Rath: **The Virtual Bodhran - the Vodhran**, in Proceedings of the 2002 Conference on New Interfaces for Musical Expression (NIME02), Dublin, Ireland, pp 169-170, 2002.

Book Chapters

R. Bresin, K. Falkenberg Hansen, S. Dahl, M. Rath, M. Marshall and B. Moynihan: **Devices for manipulation and control of sounding objects: The Vodhran and the InvisiBall**, In: The Sounding Object, D. Rochesso and F. Fontana (eds.), 2002

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