

MARC DOWNIE

EDUCATION

- 2005 Ph.D., Program in Media Arts and Sciences, MIT, Cambridge MA,.
- 2001 S.M. (Media Arts and Science) MIT, 2001.
- 1998 M.A. (Natural Science), MSci. (Physics), Magdalene College, University of Cambridge, UK.
Bundy Scholar, Magdalene College. Awarded: First class honours degree and The Mott Prize, 1998.

PROFESSIONAL POSITIONS

- 1996 Algorithmic designer, British Petroleum, UK.
- 1997 Founding programmer, Transversal, Cambridge, UK.
- 1998–2005 Research assistant, Synthetic Characters Group, The Media Lab, MIT.
- 2001–5 workshop coordinator, Cambridge University Moving Image Studio / MIT.
- 2002–5 British Telecom research fellow, The Media Lab, MIT.
- 2009–2010 co-Principal Investigator, *Spatializing Photographic Archives*, NEH Digital Humanities Start-up Grant (concludes June 2010)
- 2006–present Partner, OpenEnded Group, NY, NY.

UNIVERSITY AND PERFORMING ARTS RESIDENCIES

- 1999 and 2003 Media Lab Europe, Dublin.
- 2002–5 Institute for the Arts, Arizona State University
- 2008 Le Fresnoy - Studio National des Arts Contemporains;
- 2009–10 EMPAC, Rensselaer Polytechnic Institute

PUBLICATIONS

- 2001 *A Layered Brain Architecture of Synthetic Creatures*, D. Isla, R. Burke, M. Downie, B. Blumberg, Proceedings of the International Joint Conference on Artificial Intelligence, 2001.
- Multiple Conceptions of Character-Based Interactive Installations*, B. Blumberg, B. Tomlinson, M. Downie. in: Proceedings of Computer Graphics International 2001.
- 2002 *Integrated Learning for Interactive Synthetic Characters*, B. Blumberg, M. Downie, Y. Ivanov, M. Berlin, M. P. Johnson, B. Tomlinson. Proceedings of the 29th annual conference on Computer graphics and interactive techniques, SIGGRAPH 2002
- Leashing the Alpha Wolves: Mixing User Direction with Autonomous Emotion in a Pack of Semi-Autonomous Virtual Characters*. B. Tomlinson, M. Downie, M. Berlin, J. Gray, D. Lyons, J. Cochran, and B. Blumberg. Proceedings of the 2002 ACM-SIGGRAPH Symposium on Computer Animation.
- 2003 *Viscous Display: Adaptive Transient Interfaces in Public Space*. L. Shirvane, M. Downie, Sketches and applications, Proceedings of the 30th annual conference of Computer graphics and interactive techniques, SIGGRAPH 2003
- 2005 *Choreographing the Extended Agent*, Ph.D dissertation, MIT.
- 2008 *Field—a new environment for making digital art*, Computers in Entertainment (CIE), Volume 6 , Issue 4 (12/08)

SELECTED ARTWORKS

- 2010 *Upending*. An evening-length work of live 3D cinema form that has the viewers' eyes probing the projected imagery almost as if touching its light; set to a special recording of Morton Feldman's String Quartet N° 1, performed by the Flux Quartet. Created with Shelley Eshkar and Paul Kaiser. Commissioned by the Experimental Media and Performing Arts Center (EMPAC) at Rensselaer Polytechnic Institute, Troy, NY, where it premiered on March 25 2010.
- 2007 *Hyposurface*. Interactive pneumatically-actuated architectural exhibit. In collaboration with Mark Goulthorpe.

Breath. A site-specific public artwork for the facade of Avery Fisher Hall, it explores the idea of sacred music through an interlocking series of banners and lightboxes, with imagery derived from a computer-assisted analysis of a given subject, finding patterns in information often so dense as to elude manual search. Created with Paul Kaiser; commissioned by Lincoln Center.

Recovered Light. Projected directly on the scaffolded eastern facade of the York Minster in England, it acted as a kind of massive virtual x-ray (90 feet tall), peering through the scaffold at a masterpiece of 15th century stained glass. The artwork “solves” the puzzle of each main stained glass panel by magnifying its key elements and then reassembling them as if they were pieces in a complex jigsaw puzzle. Now on permanent display inside the Minster. Created with Paul Kaiser and Shelley Eshkar; commissioned by the York Minster and by Illuminating York.

Forest. A live five-screen installation that visually enacts outdoor games played in childhood. Opened at the Centre for Contemporary Art in Glasgow; three-screen public art installation at the Science Centre in Dublin. Created with Paul Kaiser and Shelley Eshkar; created with support from Dancing in the Streets, the Greenwall Foundation, the New York Foundation for the Arts, Renew Media, and the Rockefeller Foundation.

Point A → B. A two-screen installation that explores the urban sport of parkour. Opened at the Jerwood Space in London and the Centre for Contemporary Art in Glasgow. A reworked version exhibited in St. Petersburg in April 2009. Created with Paul Kaiser and Shelley Eshkar; commissioned by Capture05.

2006 *Enlightenment*. A public artwork created for the facade of Avery Fisher Hall, it actively investigates, visualizes, and reconstructs the deeper musical structures of Mozart by means of artificial intelligence and realtime graphics. It runs live on a cluster of 10 high-resolution displays and is likely the highest resolution live digital artwork ever created. Created with Paul Kaiser and Shelley Eshkar; commissioned by Lincoln Center.

2005 *how long does the subject linger on the edge of the volume...* Intelligent geometries respond in real-time to the relations between dancers and over time as they evolve in the intricate choreography of Trisha Brown. Created with Paul Kaiser and Shelley Eshkar; commissioned by Arizona State University and Lincoln Center; New York premiere at Lincoln Center.

22. Evocative scenes and virtual beings enter the narrative of Bill T. Jones improvising in real-time on the stage. Created with Paul Kaiser and Shelley Eshkar; commissioned by Arizona State University.

Weather for an interactive window. Realtime video projection for architectural glass display. As part of Interactive Window by the Responsive Environments group. Premiered: SIGGRAPH 2002.

alphaWolf. Interactive installation. With the Synthetic Characters Group. Premiered: SIGGRAPH 2001 “Emerging Technologies”. Shown Ars Electronica Festival 2002, ZKM Future Cinema Exhibition 2002 and elsewhere. Awarded: Honourable Mention, Prix Ars Electronica 2002; Winner, Interactive category, Keio Digital Arts Award 2002.

2001-8 *Loops*. An interactive realtime portrait of Merce Cunningham, created with Paul Kaiser and Shelley Eshkar. Premiered in October 2001 at the Media Lab of M.I.T. as part of the ID/Entity show. Traveled to the Kitchen in New York in November 2001, and subsequently to the Beall Center of UC Irvine, SF Cameraworks, and to the VideoDanza festival in Barcelona. A 3-screen “process” version opened at SIGGRAPH in July 2003, then traveled to the Institute for Studies in the Arts, Arizona State University. Special version adapted for Cunningham Events premiered in Paris in August 2002. New version with generative sound score premiered at Ars Electronica in fall 2004. An even newer version premiered at the Merce Cunningham Dance Studio in February 2008 with both software and movement released as open source.

2001 *Music Creatures: exchange | listen | exchange*. Interactive installation. Premiered: Media Lab Europe, Dublin. Shown at SIGGRAPH 2002 and elsewhere. Awarded: best film SIBGRAPI film festival, Brazil, 2002.

Trinkets: New Pieces to Play. Sound driven graphics. With: J. Paradiso, K. Hsiao and A. Benbasat. Premiered: SIGGRAPH 2002 “Emerging technologies”.

sand:stone. Interactive installation. With the Synthetic Characters Group. Premiered: The 7th New York Digital Salon.