



**QUEEN'S  
UNIVERSITY  
BELFAST**

**DOCTOR OF PHILOSOPHY**

**A Portfolio of Original Compositions (Andrew Dolphin)**

Dolphin, Andrew

*Award date:*  
2011

*Awarding institution:*  
Queen's University Belfast

[Link to publication](#)

**Terms of use**

All those accessing thesis content in Queen's University Belfast Research Portal are subject to the following terms and conditions of use

- Copyright is subject to the Copyright, Designs and Patent Act 1988, or as modified by any successor legislation
- Copyright and moral rights for thesis content are retained by the author and/or other copyright owners
- A copy of a thesis may be downloaded for personal non-commercial research/study without the need for permission or charge
- Distribution or reproduction of thesis content in any format is not permitted without the permission of the copyright holder
- When citing this work, full bibliographic details should be supplied, including the author, title, awarding institution and date of thesis

**Take down policy**

A thesis can be removed from the Research Portal if there has been a breach of copyright, or a similarly robust reason. If you believe this document breaches copyright, or there is sufficient cause to take down, please contact us, citing details. Email: [openaccess@qub.ac.uk](mailto:openaccess@qub.ac.uk)

**Supplementary materials**

Where possible, we endeavour to provide supplementary materials to theses. This may include video, audio and other types of files. We endeavour to capture all content and upload as part of the Pure record for each thesis.

Note, it may not be possible in all instances to convert analogue formats to usable digital formats for some supplementary materials. We exercise best efforts on our behalf and, in such instances, encourage the individual to consult the physical thesis for further information.

# MagNular



## Particle Collision Soundtoy

MagNular is a soundtoy which can be played by a single player, or multiple players (up to 4 players) for collaborative sound making.

Add different types of sound particles into the room. Then using a virtual magnet, attract the particles and move them around the play space.

When a particle collides with any of the tiles placed around the room, a sound event is triggered. The character of the sound is determined by the particle type, the tile object it collides with, and the force of impact. Each of the tiles relates to a different sound transformation process.

Power-up the magnet and then repel collected sound particles to create clusters of sonic events. Try using varied combinations and quantities of sound particles.

Try creating collisions in different areas of the room, and powering up the magnets for different lengths of time, this determines the force of the sound particles when the magnets are set to repel.

See demonstration video for examples.

**Player Controls: Gamepad (tested with Logitech Rumblepad)**

A virtual magnet will appear when moving gamepad thumb-sticks, up to 4 players are supported (with 4 gamepads).

Thumb-sticks = magnet (xyz)

Shoulder button = activate magnet attract mode

Trigger button = hold to power up magnet & release to repel

D-Pad = particle palette select

Button 2 = add particle

A computer keyboard may also be used to play, but a gamepad is definitely recommended.

Magnet - up/down = r / f

Magnet - forward/back = w / s

Magnet - left/right = a / d

Magnet attract = shift

Magnet power-up = spacebar (repel on release)

Particle palette select = left / right cursors

Add particle = return

**Installation:** Launch MagNular application icon, this will launch both the interface and sound engine applications. Press Escape key to quit both applications.

**Technical Requirements:** Software tested using a Macbook Pro, Core 2 Duo 2.33 GHz processor, X1600 graphics card and 3GB RAM. This is the minimum recommended system specification.