

Break Dancing with Specks

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Edinburgh Science Festival 2006

- Maadskillz
 - Fun event for teenagers designed to mix science with performance
 - Break dancing
 - Beat boxing
 - DJing
- Motion capture specks used to illustrate basic physics
 - Frequency of rotation
 - Conservation of angular momentum

Goal

- Original
 - Track breakdancer's body during live performance with a body area network
 - Far too ambitious!
- Fallback
 - Single device per dancer tracking angular velocity and heading

Timeline

- August 2005
 - Proof of concept devices based on ProSpeckZ-IIK
- September 2005
 - Video demonstration using 4 devices
- November 2005
 - Martin presents videos at 1st Dorkbot Alba meeting
 - Meets Tilo Kunath
- December 2005
 - First tests with breakdancers Billy and Harry

Timeline

- December 2005 (cont)
 - Initial design work on *Orient2* begins
- February 2006
 - Motion tracking session with dancers
 - First *Orient2* devices completed
- March 2006
 - Scriptwriting and visualisation design
- April 2006
 - Showtime!

Challenges

- Fast motion
 - Greater than 150 RPM achieved during show!
- Influenced design decisions for '*Orient2*'
 - Increased range for Gyroscopes
 - Original 2.45GHz narrowband radio found to be totally unsuitable
 - Reliable serial communications developed to use ProSpeckz-II as a wireless backbone
 - Multiple repeater devices used to ensure packet delivery

Pictures



Pictures



Videos

