MocApp

Gibson, Ruth

Author:	**Ruth Gibson**
Unit/Institution:	**UoA34, Coventry University (10001726)**
Title:	**MocApp**
Year:	**2013**
Output type:	**Software**

Description:

MocApp was developed through Gibson's AHRC Creative Fellowship. Gibson co-ordinated a group of 16 Skinner Releasing Technique dance practitioners from seven countries to be captured in the studio to create a library of 3D motion captures. Seven periods of motion capture laboratories were undertaken in the UK and Australia. These dance performances were compiled to make a unique movement database, which provided content for the app development. The task of cleaning the data involved over 500 takes, approximately one minute each, cumulating in over eight hours of material. The software development brought together Gibson with Bruno Martelli (Gibson/Martelli -igloo), Alex Woolner (Coventry University), Daniel Skovli (motion.lab) & Melbourne based programmer Scott Ashton - who previously worked with media art pioneer Jeffrey Shaw.

MocApp allows users to view & sequence motion capture data in the .htr format. The app builds a simple stick figure from the joint structure of the ‘take’, developed to allow easy viewing of mocap data without requiring users to have access to specialist software or high end PCs. It was developed to incorporate new applications for motion capture into the investigation of user/viewer/mover relationships and provides new insights to the relationships between motion capture/movement tracking and the dancing body. A motion capture viewer was created, conceptualising the mocap viewer as an iOs app ‘MocApp’ to allow users easily to look at and sequence mocap data. By distributing through the AppStore, the intention is that mocap providers or animators can quickly put takes onto the internet and users with the app can quickly download and view the results - and use them in the rehearsal, planning & editing processes. The app also has an Augmented Reality (AR) function which was designed so that performances can be evaluated as a life sized overlay to the real world.

MocApp

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MocApp allows you to view & sequence motion capture data in the .htr format. The app builds a simple stick figure from the joint structure of the take.

The app was developed through Ruth Gibson's AHRC Creative Fellowship at Coventry University School of Art & Design with the generous support of motion.lab, Deakin University, Australia. Her project *Capturing Stillness: Visualisations of dance through motion capture* is a unique exploration of the interface between motion capture technologies and Skinner Releasing Technique SRT. Focussing on the poetic imagery cited in the pedagogy, new dance visualisations are generated to create immersive artworks and enhance kinesthetic experience.

The MocApp was developed to allow easy viewing of mocap data without requiring users to have access to specialist software.

Available on the App Store

deakin motion.lab

Arts & Humanities Research Council

Coventry University

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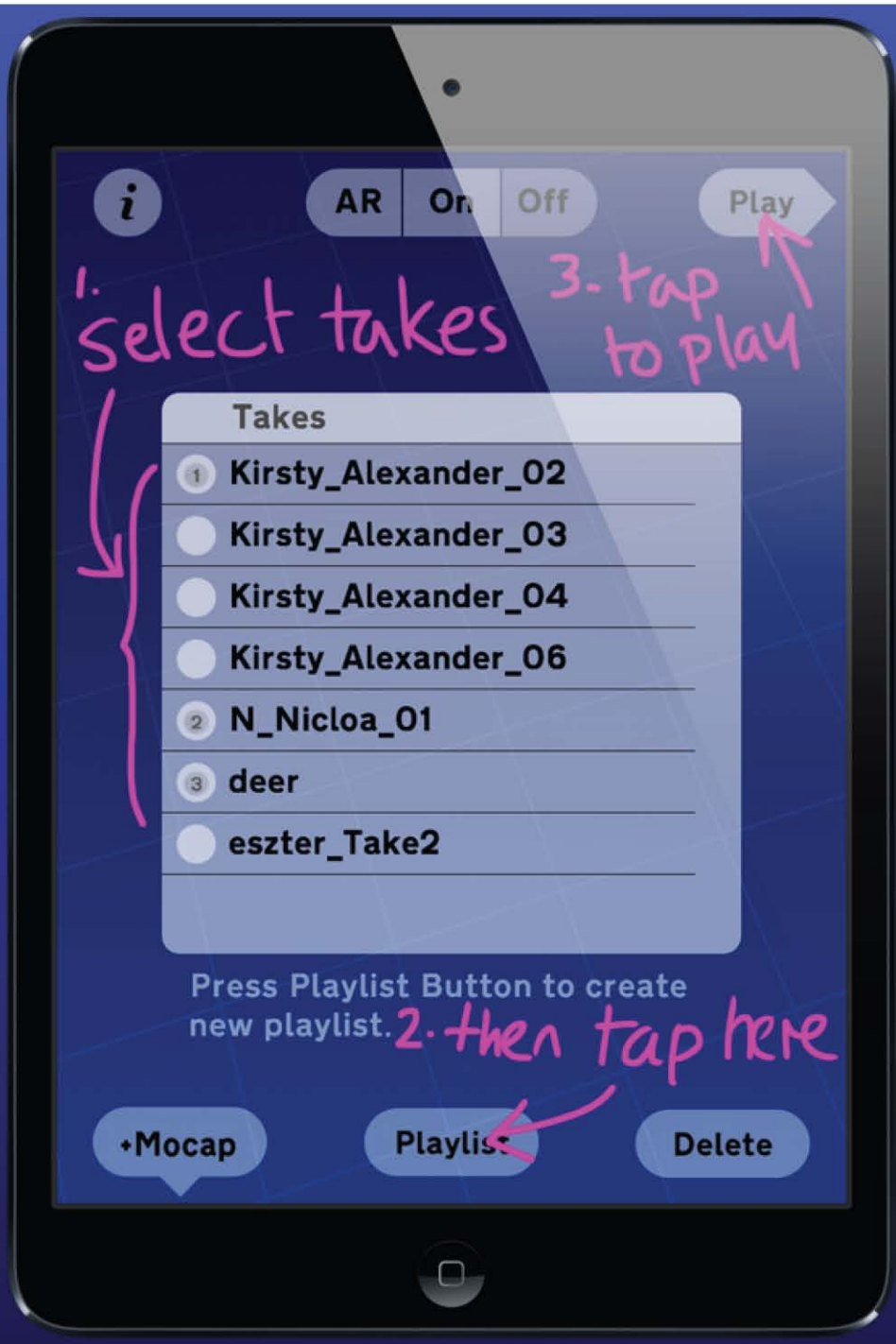

Download and print the AR Marker:

Then with AR mode ON point the camera at the marker. You can pinch zoom the character.

Point the app at www.igloo.org.uk/mocap to download example .htr motion capture files.

Available on the App Store

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MocApp

Download the How to Make .htr guide here:

This guide will take you through the steps in MotionBuilder to turn optical mocap data into the .htr format that you can view using the MocApp.

Available on the App Store

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Any comments or problems then drop a line to tech support:
eskimos@igloo.org.uk
www.igloo.org.uk

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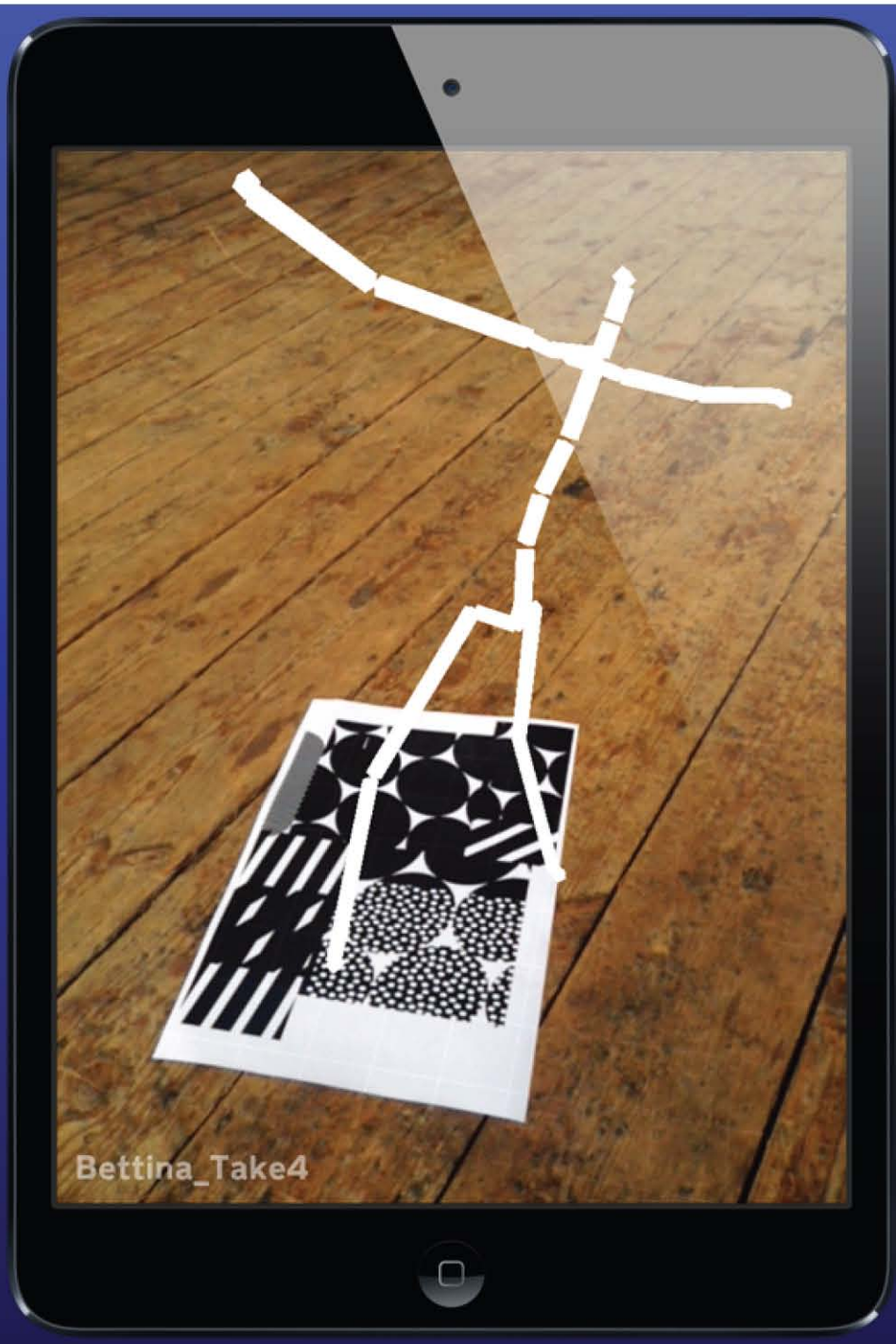

An igloo production
Concept: Gibson/Martelli
App programming: Lost in the Machine
.htr parser programming: Daniel Skovli
Demo programming: Alex Woolner
Deer Mocap: Alt Vfx

Special Thanks to:
Joan Skinner
AHRC Coventry University
Deakin University Motion Lab
Skinner Releasing Institute
Pachinko Pictures
Pandigital

Skinner Releasing Technique Dancers:
Ruth Gibson | Nicola Gibbons | Gaby Agis | Siobhan O'Neil | Eszter Gal | Bob Davidson | Bettina Nauhaus Theresa Moriaty | Kirsty Alexander | Titta Court | Joe Moran | Polly Hudson | Florence Peake | Katye Coe | Julie Nathanielsz | Wendy Smith

Available on the App Store

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Coventry University

MocApp

View More By This Developer

By Gibson/Martelli (igloo)

Open iTunes to buy and download apps.

View In iTunes

This app is designed for both iPhone and iPad

£1.99

Category: Utilities
Released: 14 March 2013
Version: 1.0
Size: 40.7 MB
Language: English
Developer: bruno martelli

Rated 4+

Compatibility: Requires iOS 6.0 or later. Compatible with iPhone, iPad, and iPod touch. This app is optimized for iPhone 5.

Customer Ratings

Description

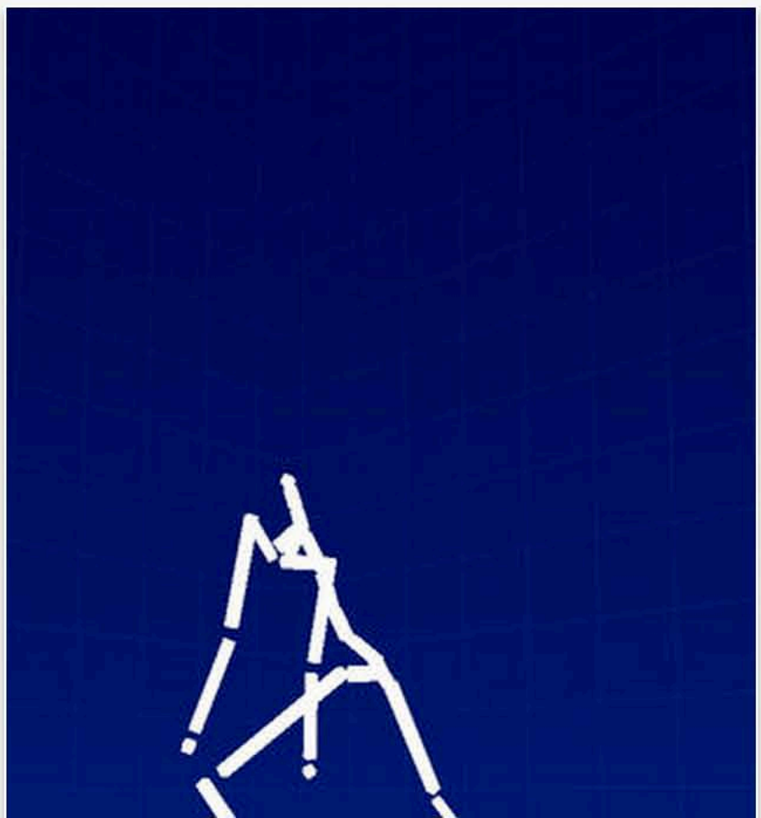
View, sequence & download motion capture files. The app builds a simple stick figure from the joint structure of the take. Swipe to rotate, pinch to zoom, 2 finger tap to change take. Tap take name to see info and download more takes, and turn on Augmented Reality function. The app reads mocap files in the .htr format and was developed to allow easy viewing of mocap data without requiring specialist software.

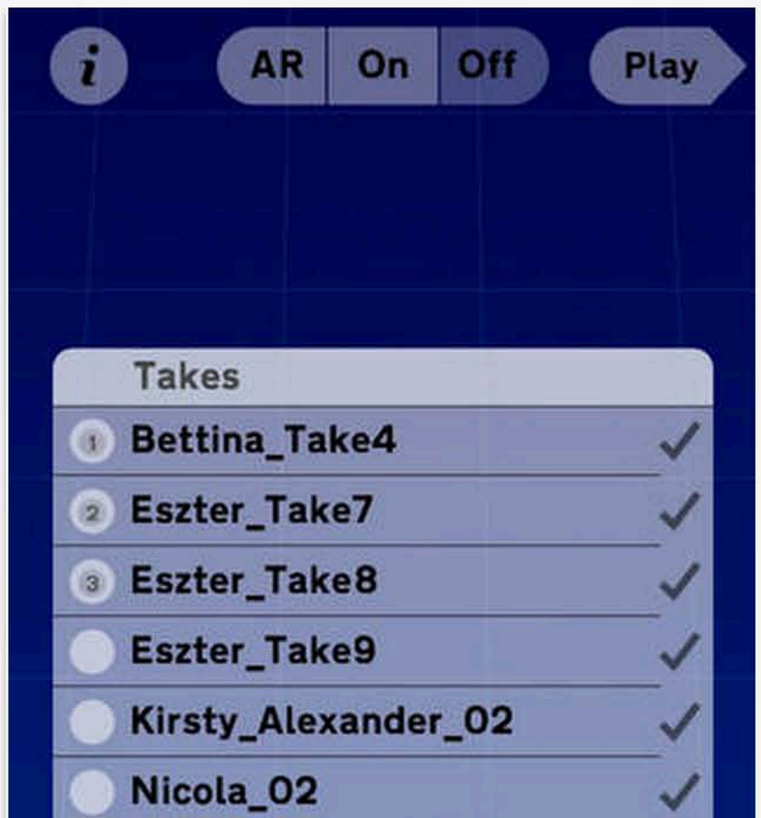
Download the AR marker from: www.igloo.org.uk/AR.html
Download the guide to making .htr mocap files from: www.igloo.org.uk/mocapp/make.html

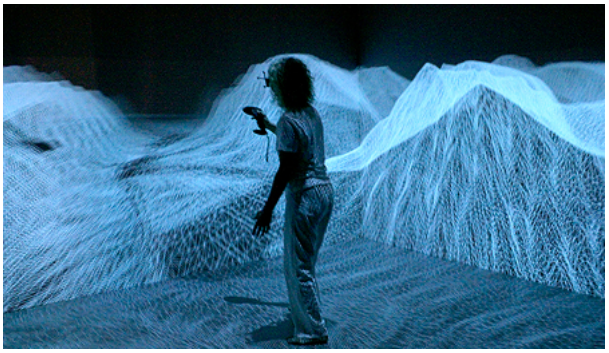
Gibson/Martelli (igloo) Web Site ▸ MocApp Support ▸

Screenshots

iPhone | iPad







14 April 14 March and 26 June to 26 Aug 2013
CHRISTIE/CAFKA Residency
We are Artists -in-Residence with CAFKA at Christie Digital Systems in Kitchener, Canada, an immersive setting for advanced research capability. We will be developing a new work *'In Search of Abandoned'* with their HIVE Virtual Reality system.

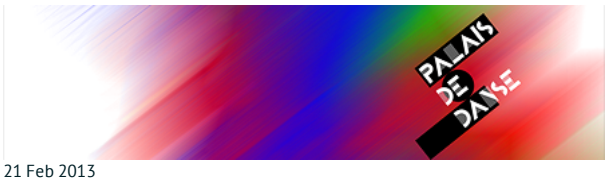
For the residency the artists will create an immersive environment based on *Abandoned* a 'non-place' in the Arctic Circle. They will build a computer-generated world using height-map data & game engine technology. The resulting 3d interactive stereoscopic experience brings together an imagined view of place & an experienced one.

'a landscape is not just a representation of a desert or forest. It shows an inner state of mind...'. - Herzog.

images of Testing with the CAVE & Rift

2013
La Game Space
We are making something for the LA GameSpace - it's a 'nonprofit center for videogame art, design, and research. It is a place for game innovation, education, and exhibition; where all of us can play and make and study and showcase games.'

They just reached their goal of raising over $250,000 on Kickstarter to make it happen and we were honoured to be asked to be one of the many contributors making a new game.



21 Feb 2013
Centre for Dance Research C-DaRE - Research Events
Gibson/Martelli present *Capturing Stillness - Palais de Danse II*

Capturing Stillness uses performance capture & computer game worlds to create transformative experiences derived from Skinner Releasing Technique and its poetics. For this presentation Ruth Gibson & Bruno Martelli will describe the project's background and context, commenting on their current artistic practice & their future residency at CAFKA/Christie Digital Systems in Canada - where they will be developing immersive stereo 3d environments with the aim of creating a kinaesthetic code.

The event will be in the form of a drop-in Salon, opening up the projects advances in the motion capture studio - including a demonstration of MocApp - an AR iphone motion capture viewer app developed with Alex Woolner (SGI), Daniel Skolvi

14 March 2013
MocApp Launch
MocApp is a new iOs app for iPhone and iPad by Gibson/Martelli v to easily view & sequence motion capture data. The app builds a figure from the joint structure of the take. Takes can be downloa and stored on the device. The app has an Augmented Reality fun can see the figure layered with reality. The app reads motion cap format.

MocApp was developed through Gibson's AHRC Creative Fellows University School of Art & Design with the generous support of a of international dancers experienced in Skinner Releasing Techn motion.lab, Deakin University, Australia.

4 Feb - 7 July 2013
SwanQuake: House / Watch-Me-Move - Barbican Tour
4 Feb - 7 April Centro Cultural Banco do Brasil, Rio de Janeiro, Br
29 April - 7 July Centro Cultural Banco do Brasilia, Brazil

Watch Me Move aims to demonstrate the centrality of animation t global culture. It is the most extensive exhibition ever mounted of animated imagery produced in the last 150 years – from Snow Mickey Mouse to the Hulk.

The exhibition brings together industry pioneers, independent fil contemporary artists including Étienne-Jules Marey, Harry Smith, William Kentridge and Nathalie Djurberg alongside the creative commercial studios such as Walt Disney, Aardman, Studio Ghibli

The exhibition is curated by Greg Hilty, Curatorial Director at Liss page book accompanies the exhibition, edited by Greg Hilty and texts by Suzanne Buchan, Greg Hilty and Paul Wells.

(motion.lab) & Melbourne based programmer Scott Ashton who has previously worked with media art pioneer Jeffrey Shaw.

Days / Times: 21 Feb 2013, 5-7pm
Location: Institute for Creative Enterprise (ICE), Coventry University, Technology Park, Parkside, CV1 2NE Tel: 44(0)24 7615 8300

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15 Jan 2013
Kinosphir - she's lost control
Innovative future thinkers from a wide range of backgrounds will be inspiring, informing and challenging their audience to think about our as yet impossible futures in the *As Yet Impossible* lecture series at the University of Salford's state-of-the-art digital campus at MediaCityUK.

Launched earlier this year by world leading cyberneticist Kevin Warwick, this lecture series will continue to show some of the latest innovations brought to us by 21st century futurists.

Artists Gibson/Martelli will talk about their past/current & future projects - which deal primarily with figure & landscape. Special attention is given to experience - a *kinosphir* - a new methodology of giving audiences immersive experiences using a variety of techniques including game engine visualisations, motion capture, haptic interfaces & stereo projections to convey imagery derived from & relating to the Skinner Releasing dance technique.

The lectures will take place at the innovative performance space, the Digital Performance Laboratory, at the University's MediaCityUK facility.

Days / Times: 15 Jan 2013, 6-8pm
Location: Media City, Salford University, Manchester

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1 Dec
Palais de Danse
Palais de Danse -Salon SRT - a get together with conversation about recent projects, mocap viewing, fine wine and nibbles at igloo studios.By invitation only!! - please RSVP if you plan to attend.

Days / Times: Saturday 1 Dec 17:00 - 20:00
Location: igloo studios bell 3 Unit 301 449 Bethnal Green Road, London E2 9QH

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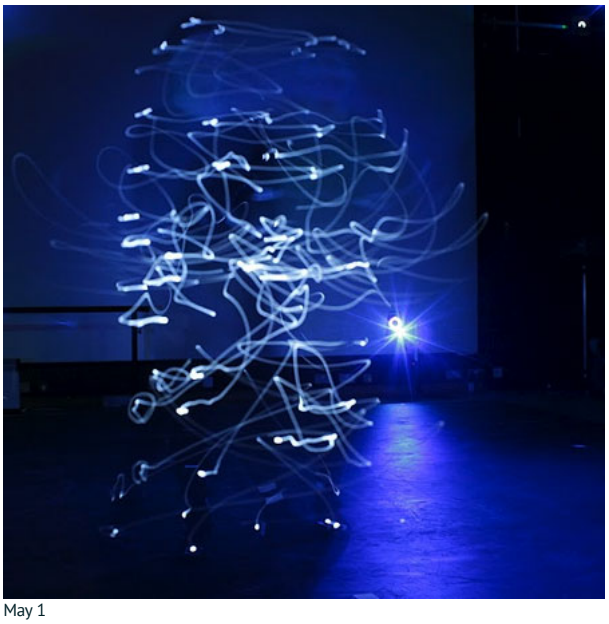


May 1
Capturing Stillness: Visualisations of Dance through Motion Capture Technologies is a unique research project which focusses on the movement practice Skinner Releasing Technique (SRT) and motion capture technologies. The study forms the basis of Ruth Gibson's Creative Fellowship at Coventry University's School of Art and Design (Arts & Humanities Research Council Award). She is working with visual artists, dancers, and programmers experienced in their fields to question the

relationships that arise between the poetic imagery cited in the pedagogy aligned with motion analysis, visualisation techniques and digital technologies & how these findings in combination with SRT's principles can permeate the development of kinaesthetic Human Computer Interfaces for mobile devices and large scale projected realtime 3D environments.

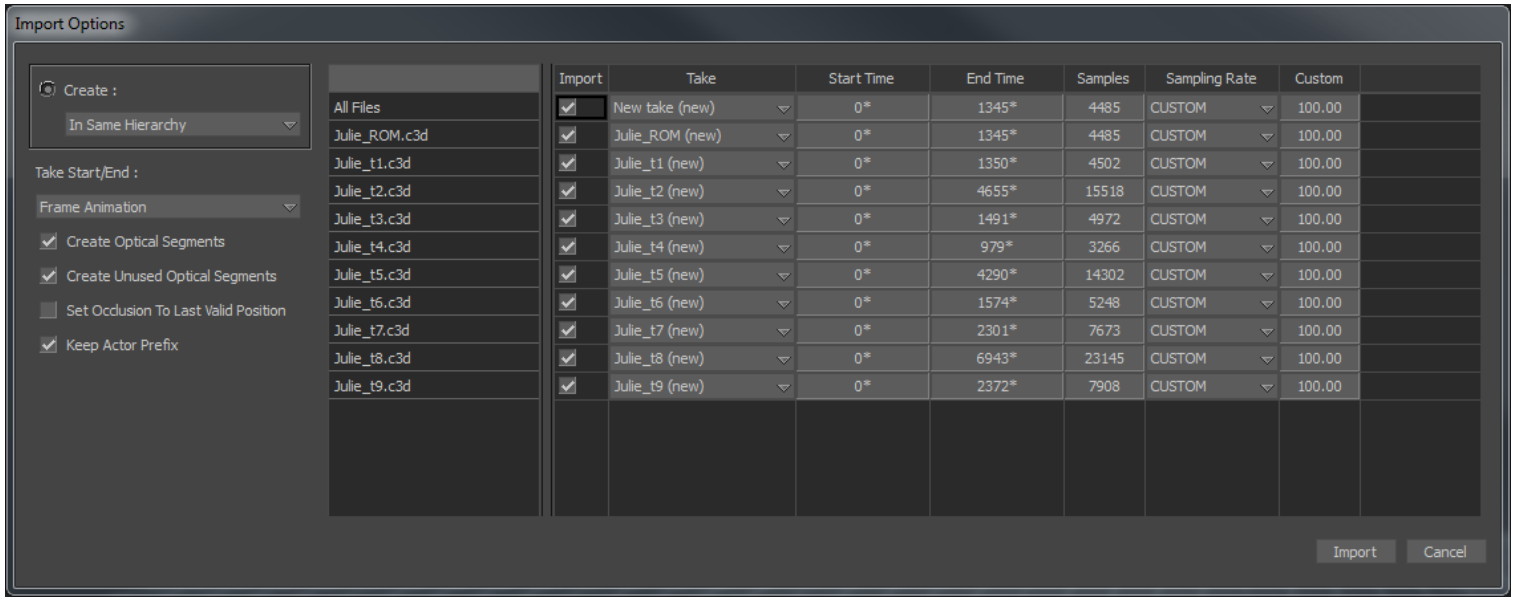
April 5
Insert Art to Play
We are interviewed in the new book by Mathias Jansson *Insert Art to Play* which is a collection of interviews and essays about game art. Best of all its free to download here: http://www.janssonswebb.se/gameartthebook.pdf

Make .htr files from Motionbuilder Quick Start Guide

1. Import mocap
2. Add an Actor
3. Rotate the mocap Optical Root
4. Create an Actor Marker set
5. Add a character skeleton
6. Plot the character
7. Export .htr
8. Add the .htr to the *MocApp*
9. Issues, problems

01. Import mocap

Open **Motionbuilder** then to Import Mocap files: *File/Motion File Import* - then **SAVE**

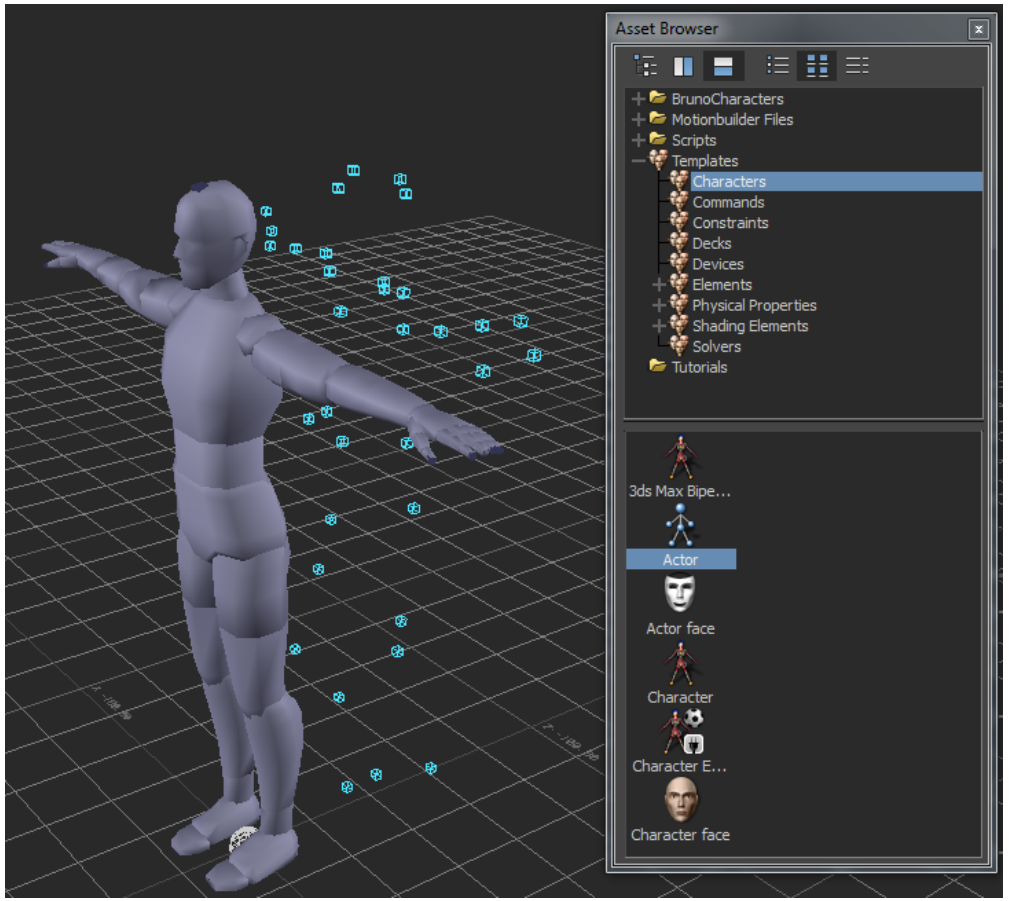


02. Add an *Actor*

Open *Asset Browser/Templates/Characters/Actor* - drag an *Actor* into 3d window. This dude will represent your mocap performer.

03. Rotate the mocap *Optical Root*

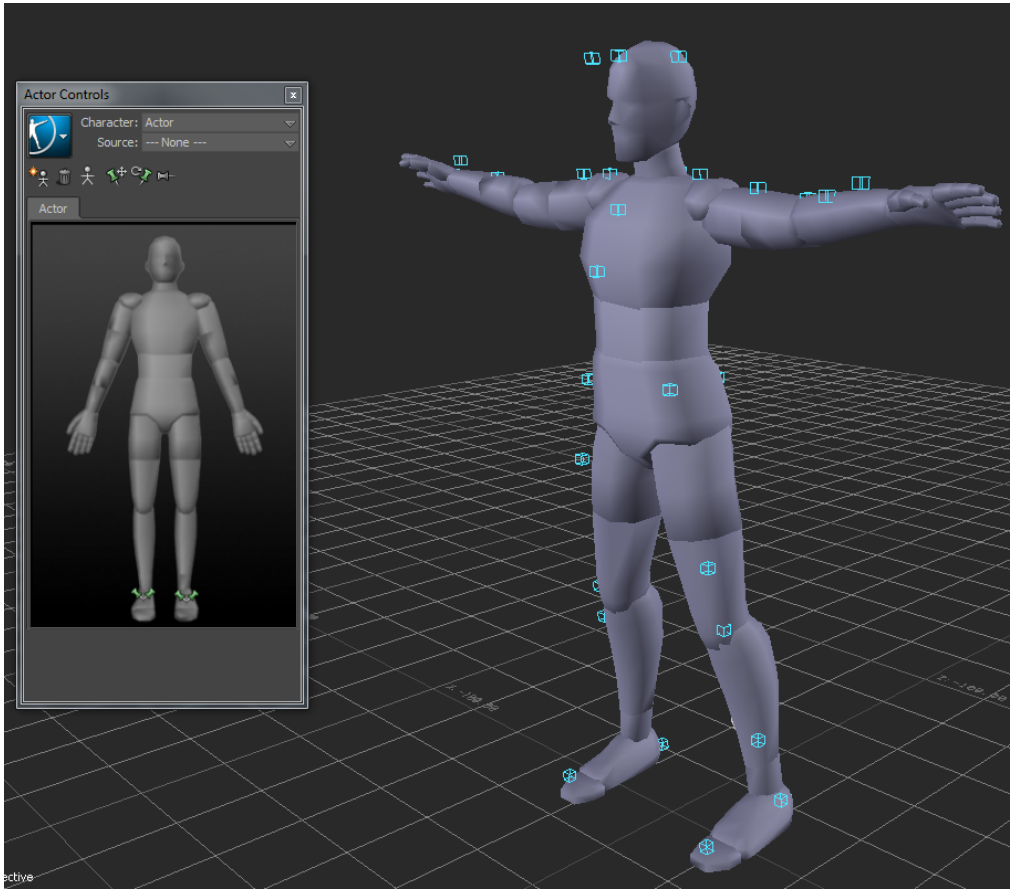
Make sure the ROM take is selected - choose a good frame where the Actor is in a T-pose position facing forward, then select the Optical Root & rotate the mocap to match the Actors orientation. (The optical root is the grey wireframe ball between the Actors feet in this pic.)



04. Rotate the mocap *Optical Root*

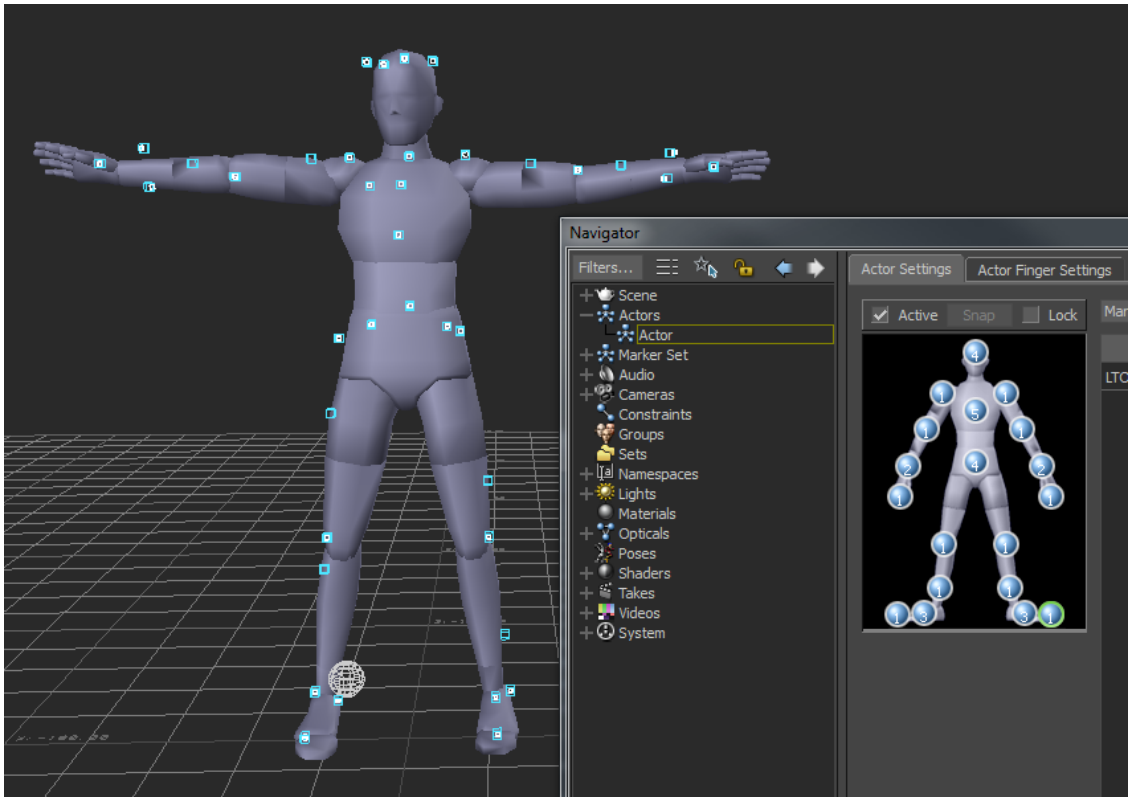
Open the **Actor Character Controls**. This will enable you to select Actor body parts, also try toggling on and off the on the *Display/X Ray mode*. Now try and move and scale the **Actor Body** to fit the mocap data - the idea is to make the actor the same shape as the original performer, with the blue optical markers in the same place as the mocap markers were in real life in the mocap studio.
You can turn on the ***I*K Manip** in the **Actor/Character** controls to make it easier, eg when you drag the hand to the correct position the arm will follow.

The main thing is to get the bends of the knee & arm & ankle in the right place, else the actor won't look quite right a bit later. -its always possible to try it and then go back a step and tweak the actor size or position.



04. Create an *Actor* Marker set

Open the **Navigator** and under *Actors/Actor* look in the *Actor Settings Tab*. Hit *Marker Set/Create*. Also set the **display mode** to *Xray*. Now swipe over optical markers in the 3d window and Alt/drag them onto the round Marker Set dots in the **Actor Settings window** - For example the 4 optical markers for head go into the head slot etc. It's possible to use a optical marker in more than one Actor Marker dot. For example I use the toes, ankle & heel marker in the foot, and toes for toes and ankle for ankle. You don't have to use all your optical data. One of my chest markers fell of during capture so I didn't use it in the chest slot.



Then when you are done Tick *Active* - the actor will now follow the motion capture.

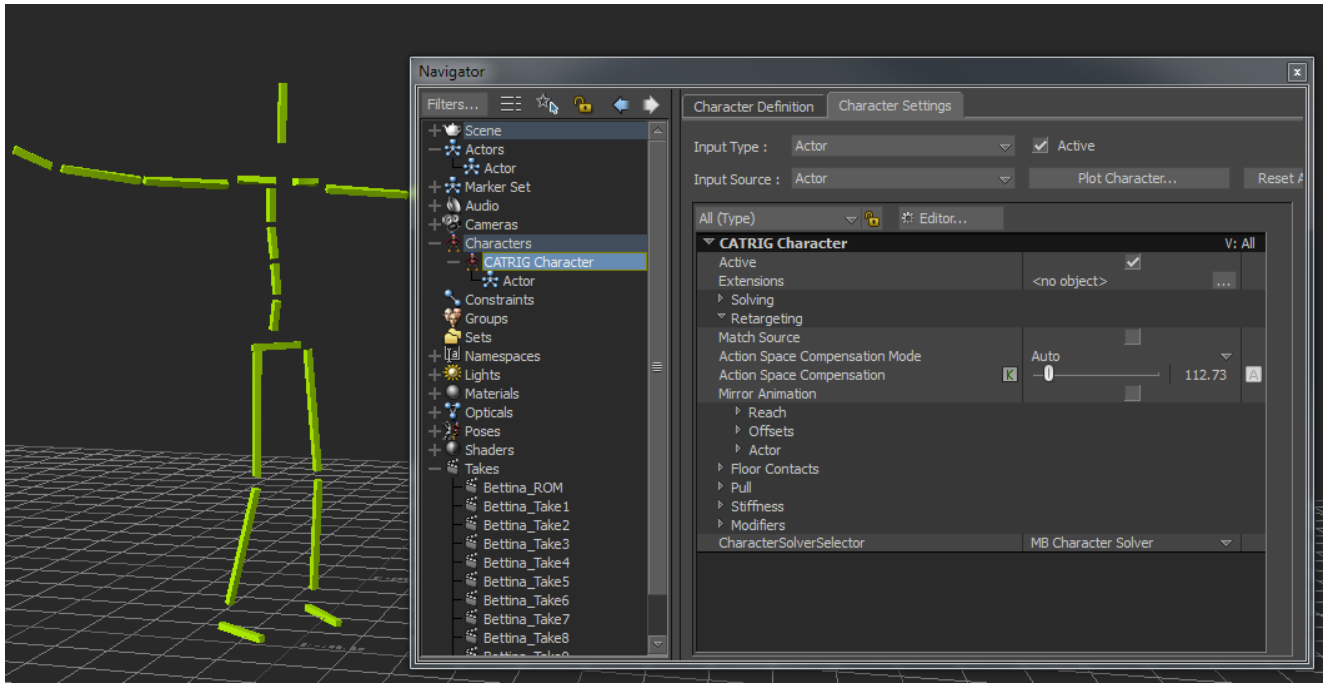
TIP:
If you are super smooth you can import a previous marker set rather than creating a new one. This is for when you have a few different performers who have all used the same marker set. When you import it you will see the marker set list populated. All you have to do is swipe over & select all your optical markers & drop them into the *Objects* part of the list (make sure you are in *Xray Mode* to do this OR select all the optical markers from the *Schematic View* (CTRL W)

Next step - you need to click on the ***Snap*** button then choose *TR* - this will move the white actor markers to the position of the blue optical data markers & make your actor active. (Remember this step if you tweak later - also if you are tweaking the actor take it off *Active*.

Saving & importing a marker set saves tons of time. You can save yours by clicking the **MarkerSet** button & choosing *export*.

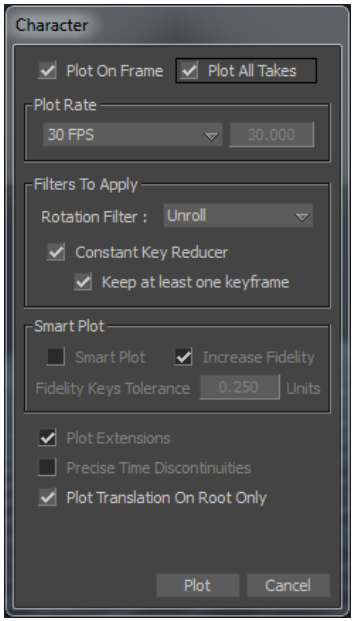
05. Add a character *skeleton*

Now we need to add a character skeleton.
Open the **Asset browser** and drag a *characterised* character into the 3d window - choosing the *FBX merge / No animation* option.
Then in **Navigator** choose *Characters/<YourCharacter>/ Character Settings* Set the *input type* to *Actor* and the *input source* to *Actor* and tick *Active*. Now the character will follow the mocap. In my pic I've got a super simple character (if you don't have a character use *Mia* - which is in the tutorials) - actually its only his skeleton that gets turned in the .htr, we don't care about the mesh here.



06. Plot the character

Now Click **Plot Character** and choose *Skeleton* - in the next dialogue choose *Plot all takes* then hit **Plot**. This will bake the optical data onto the skeleton of the character.

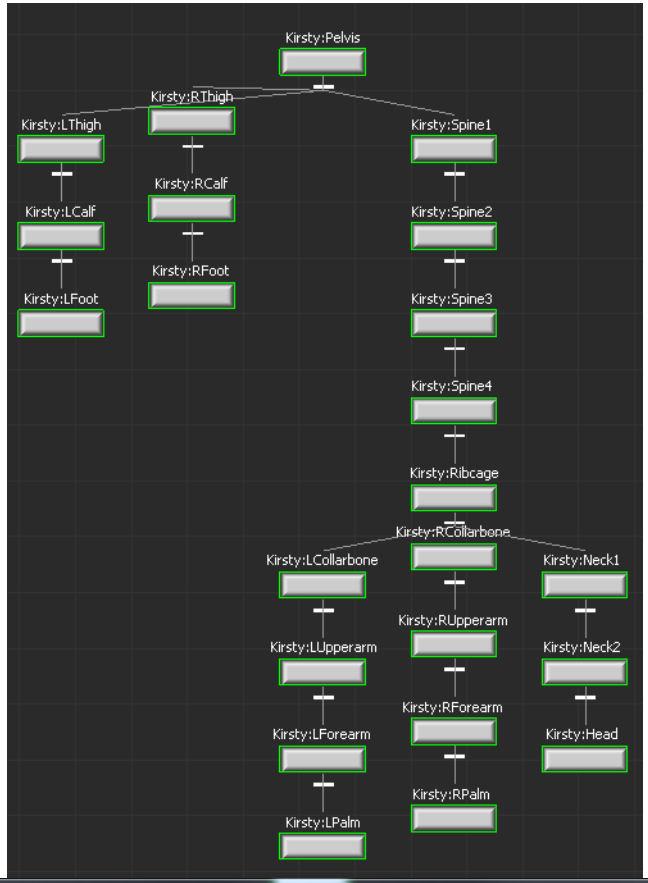


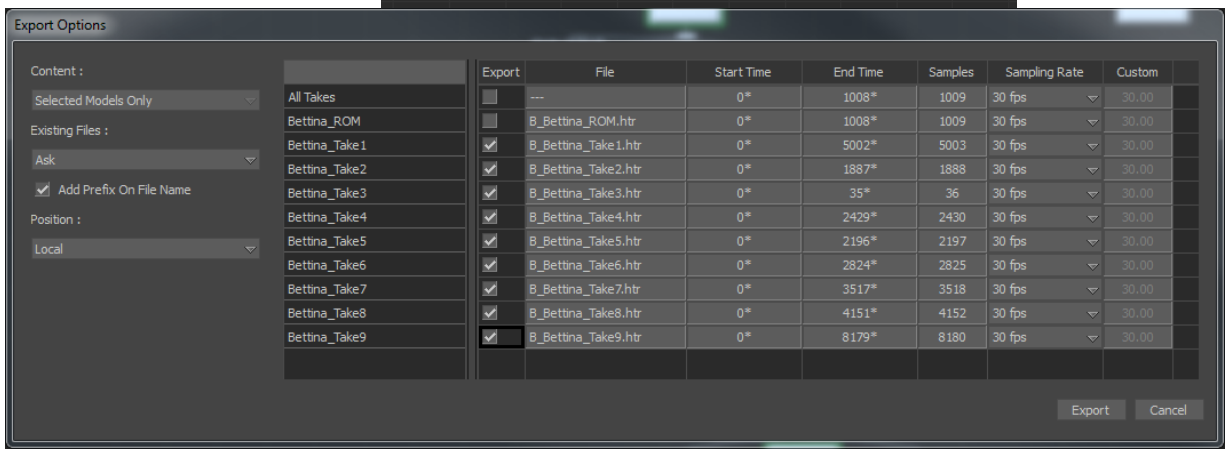
07. Export *.htr*

Hit CTRL W to bring up the **schematic** window. Select just the characters skeleton then choose *File/Motion File Export* & form the next dialogue choose which takes you would like to export.

08. Add the *.htr* to the MocApp

You can either upload the *.htr* files to a website (then use the app to download them - by entering the URL into the slot in the **+Mocap** screen)
OR
Plug your *iPad* or *iPhone* into a computer running *iTunes*. Under the *Devices/ Apps* section look for the *File Sharing* area at the bottom, click on **MocApp** open drag the *.htr* files onto **MocApp Documents**





09. Issues, problems

.htr export problems - make sure you have the entire skeleton selected for export. Use the *File /MotionFile Export* NOT *File/Custom/Export/Motion Analysis HTR*

Motionbuilder crashes /issues
if you have crashes then send a bug report to **Autodesk** using the pop up error window - they will be able to tell if you need a maintenance service pack or patch & give you a link. That can be quite handy.

if the mocap take imports, but is then blank, select it in the *Navigator/Takes* and delete it then select optical root and reimport with the settings like this THEN SAVE

Its always good to make separate files for different mocap days for the same performer - because the markers wont line up properly.