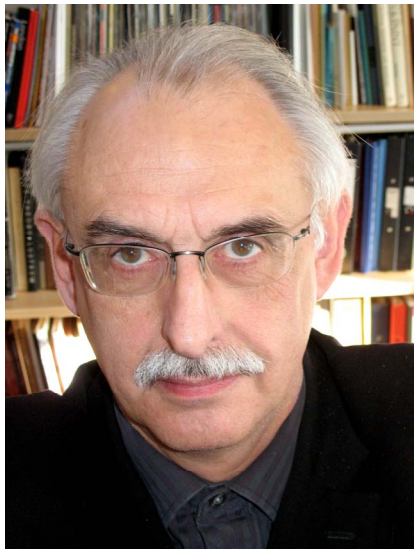
i3DPost

intelligent 3D content extraction and manipulation for film and games



The Foundry (UK)

Trinity College Dublin (IRL)

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CERTH-ITI (G)

Quantic Dream (F)

BUF Compagnie (F)

Tom Evans (Wavecrest Systems)

on behalf of Dr Bill Collis (The Foundry)

i3DPost Summary

“i3DPost will develop new methods and intelligent technologies for the extraction of structured 3D content models from video, at a level of quality suitable for use in digital cinema and interactive games.
The research will enable the increasingly automatic manipulation and re-use of characters, with changes of viewpoint and lighting. i3DPost will combine advances in 3D data capture, 3D motion estimation, post-production tools and media semantics.
The result will be film quality 3D content in a structured form, with semantic tagging, which can be manipulated in a graphic production pipeline and reused across different media platforms.”

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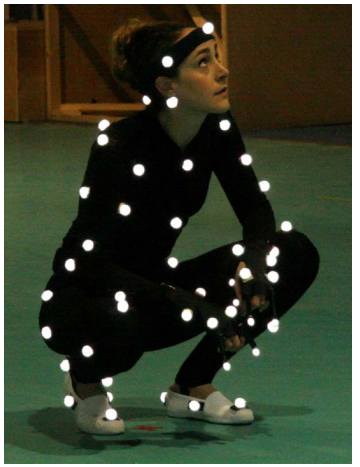
Trends in
Film & Games
Industry

- Greater quality, more SFX
- Special cameras and set preparation
- Deferral of decisions to post
- Frustration over disposal of metadata in post
- Limitations of 2D technologies
- Limitations of marker-based capture
- Interest in ‘3D’ - stereo, multi-view
- Film/game crossover



i3DPost Trend toward cinematic Games quality

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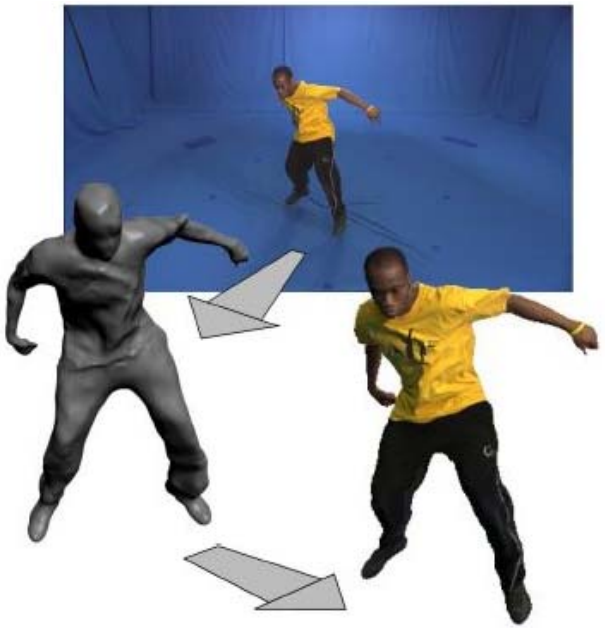
Multi-source data capture for free-viewpoint video, scene analysis & model extraction



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Multi-source data capture for free-viewpoint video, scene analysis & model extraction

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Multi-source data capture for free-viewpoint video, scene analysis & model extraction

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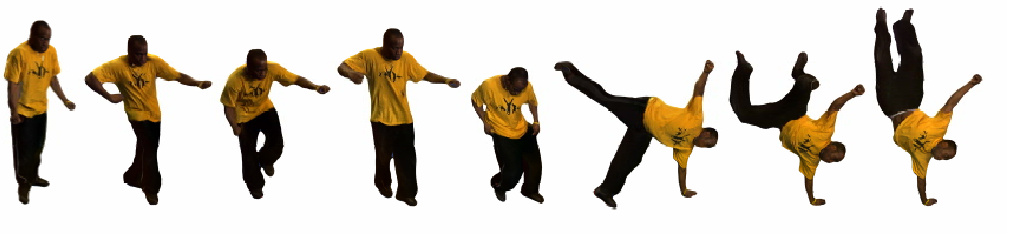
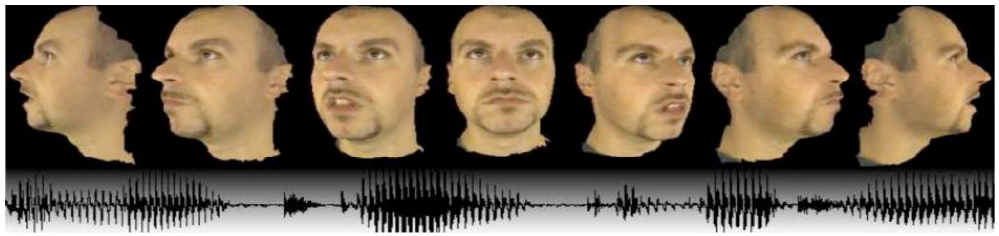
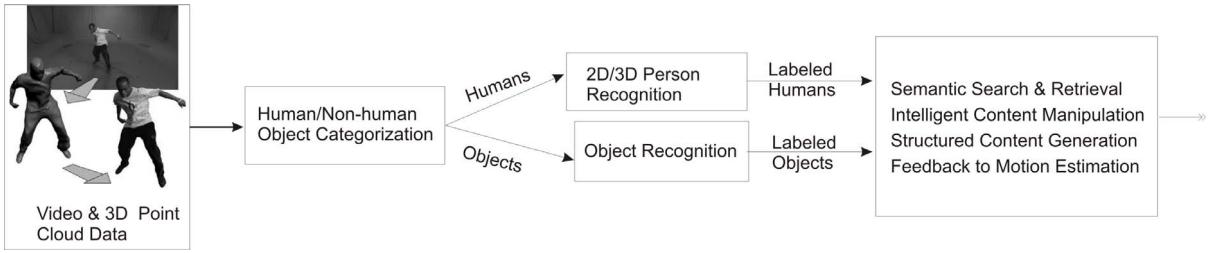
Generating depth information from single-camera Point Cloud Data

i3DPost Research Areas

- Multi-source data capture, free-viewpoint video, scene analysis, model extraction
- Facial capture
- 3D Motion analysis, point matching, motion estimation
- 3D Semantic analysis of scenes and figures
- Multi-viewpoint 3D capable software, plug-ins and tools
- Experimental Production







i3DPost Objectives

- To capture and represent 3D data from still and moving objects as a basis for generating different kinds of content
- To generate high-quality representations of sets and actors from the captured data, for use in different scenes or contexts, taking into account the dynamics of skin and clothing
- To create software tools and plug-ins for the intelligent manipulation and repurposing of scenes, characters and faces
- To show the usefulness of the technologies in experimental production across different media and platforms
- To establish open standards for plug-ins for 3D content manipulation

i3DPost Hard challenges for the future

- General solutions to the relighting problem, including the on-set capture of dynamic reflectance properties of actors, or static reflectance with high specularity

- Simultaneous face and whole-body marker-less capture to feature movie standards

- Broad range (unconstrained) object class & activity recognition

i3DPost Success factors

- *Concept and objectives are extremely relevant to the film and games industry, tools for interactive storytelling, virtual 3D characters and scene reconstruction. There will be a substantial development beyond the state of the art in 3D reconstruction and semantic analysis of video streams.*
- *The consortium is well balanced. The partners have impressive experience and track record, with the necessary skills, knowledge, and presence in the marketplace.*
- *This is a highly professional proposal and the consortium has direct access to distribution channels. It will be very easy to disseminate and exploit results.*
- *The proposal is ambitious, will carry a high probability of commercial success and should be highly influential on good practice in film postproduction and virtual storytelling.*