



## LOUIS CUEL, ER4

### Digital Cultural Applications

#### Visual Trackers for intangible performing arts

The partner from the University of Geneva is the leader of Work Package 5: "Digital Cultural Applications" that began the 1st of March 2015. ESR 13 Simon Sénécal and ER4 Louis Cuel have been recruited the 1st of June 2014 and the 1st of January 2015 respectively. They have been working on the project respectively since 12 months and 5 months. Several research achievements have been focused on to reach the goals of the work packages 5 that constitutes the main task of MIRALab.

Miralab is developing several online-based interactive applications. ER4 is involved in the following plug-in.

Supervisor : Professor Nadia Magnenat-Thalmann



#### Interaction and Tracking

Work in progress



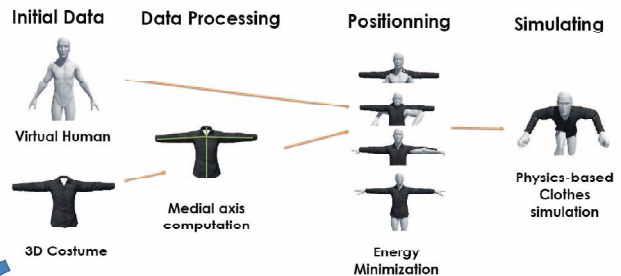
This c# program includes

- User presence acquisition from Kinect
- Statistic Markov Model to process the data
- A Unity platform for the visualisation

Development of believable intelligent virtual human behaviour in interaction with the user.

#### Virtual Clothing

Work in progress



Dynamic mapping of virtual clothing typical for cultural heritage activities. Several research achievements have to be reach to develop the application.

- Medial axis computation of the garment.
- Automatic positioning of the cloth on the virtual human.
- Physics-based cloth simulation.

#### Final Applications

Work in progress



Achieving immersiveness in augmented and virtual reality in case of intangible cultural heritage scenario.

#### Tangible Acquisition

Secondment in 2015



Clothes acquisition for art restitution



Clothes acquisition for a ceremony restitution in Asinou church (Case study 1)

Acquisition of the cultural heritage costumes with a photogrammetric method. This acquisition may need a post-processing for example to remove wrinkles.

- Secondment in "Dachverband Tanz Deutschland" in Berlin planned in 2015.

#### Intangible Acquisition

Secondment in June



Incorporation of the motion capture data into a 3D Animation system.



Example of motion capture of a dancer.

Real time tracking of user movements while performing intangible cultural heritage activities. The first acquisition is planned in June in Cyprus with CUT. We will capture the motion of an orthodox priest during a real ceremony.



Home Country



Host Country



UNIVERSITÉ DE GENÈVE

MIRALab

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