

Project team

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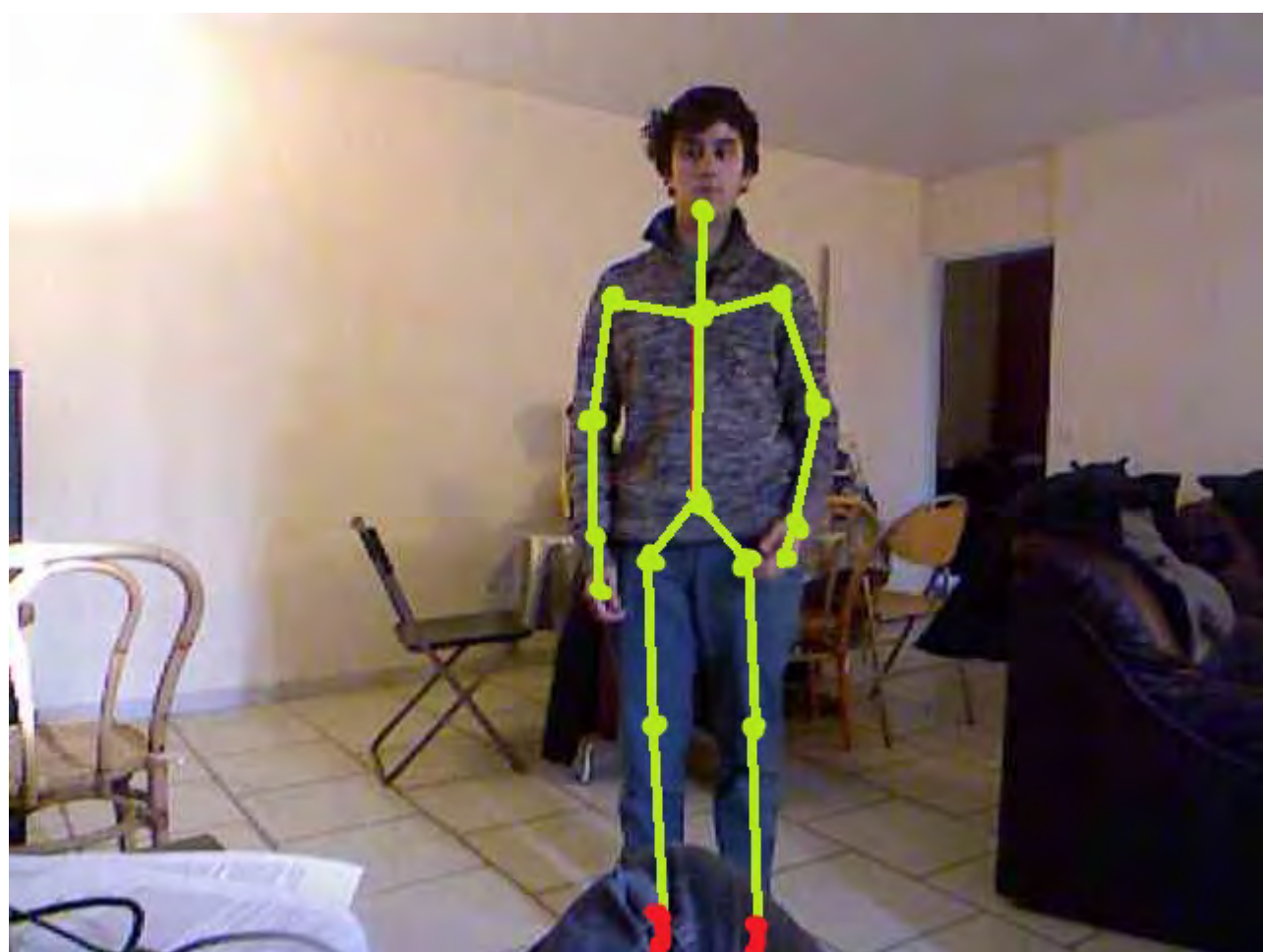
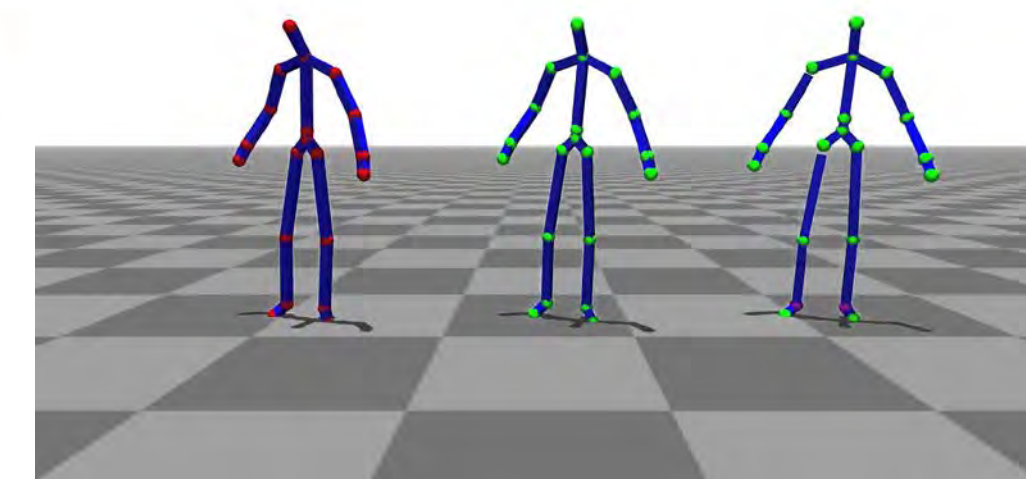
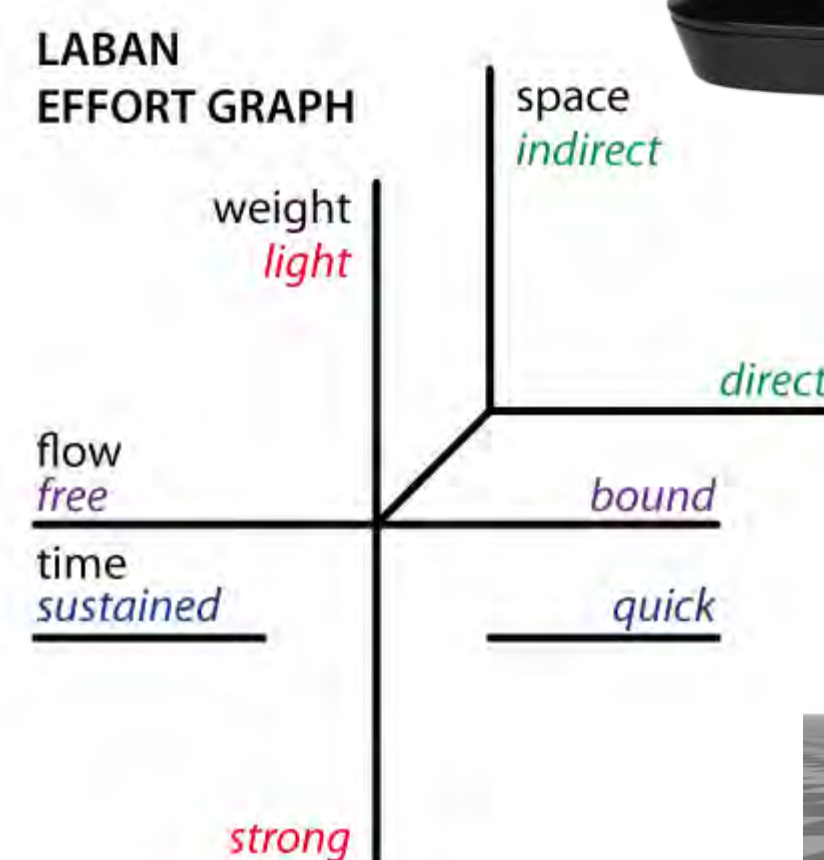
Context, objective and applications

Action recognition

- A gesture is a body movement containing meaningful information
- Objective: analysis and semantic interpretation of body gestures acquired with a Microsoft Kinect 3D camera
- Applications : e-health, video games, artistic creation, video surveillance, human-computer interaction, immersive and affective communication, ...

Laban Movement Analysis (LMA)

- Expressivity model based on 5 components (« qualities ») created by Rudolf Laban in 1928



Creation of the database

New gestures interactions

- Existing Kinect gestures databases are rare, and not always as accurate as they should
- We use the Kinect's API, plus custom code
- We chose a set of 12 predefined actions
- For statistical reasons we wanted to ensure in the database, some of the gestures are really close from each others, and some others are very different
- 11 people, who recorded...
- ...12 sequences (for each person) of 6 randomly-chosen gestures from the 12 possible
- Color image, Depth Image, Skeleton

Platform for real-time gesture recognition exploiting the LMA model

With SVM

- Always records the user's gestures
- Detects when the gesture occurs with our own energy-based detector
- When a gesture occurs, we calculate the LMA descriptors
- Using Support Vector Machines we determine the gesture
- We use 2 buffers in order to keep recording the user's movements while analyzing the detected gesture

