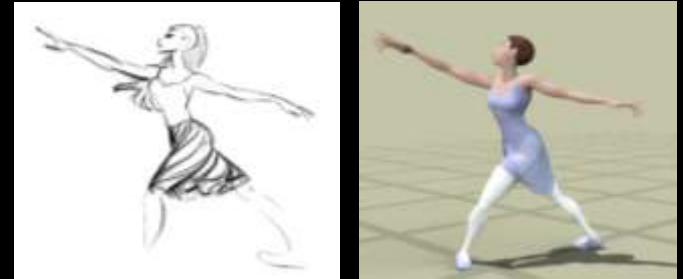


Motion Capture and Time Series

- “Leveraging the Talent of Hand Animators to Create Three-Dimensional Animation”, Eakta Jain, Yaser Sheikh, Jessica Hodgins (SCA 2009)
- Possible project for this class



Eakta Jain

PhD student, RI

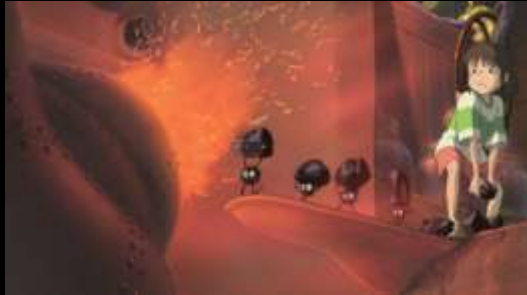
Graphics Lab

ejain@cs.cmu.edu

Hand-Drawn Animation



Snow White,
Walt Disney Studios



Spirited Away, Hayao Miyazaki



Hand animator's workdesk

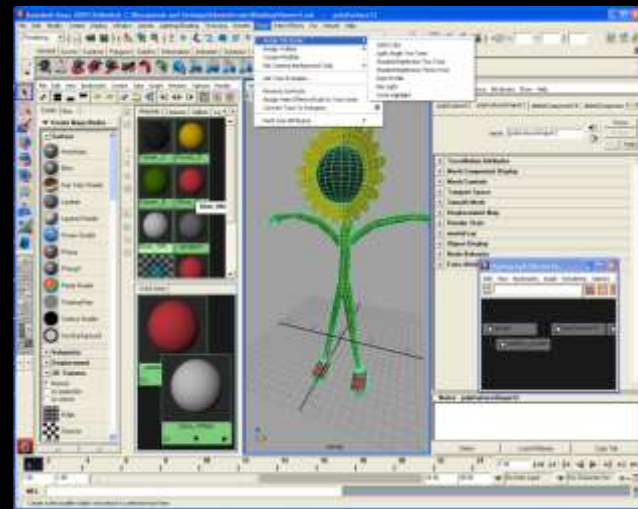
Three-Dimensional Animation



Ice Age, Blue Sky Studios

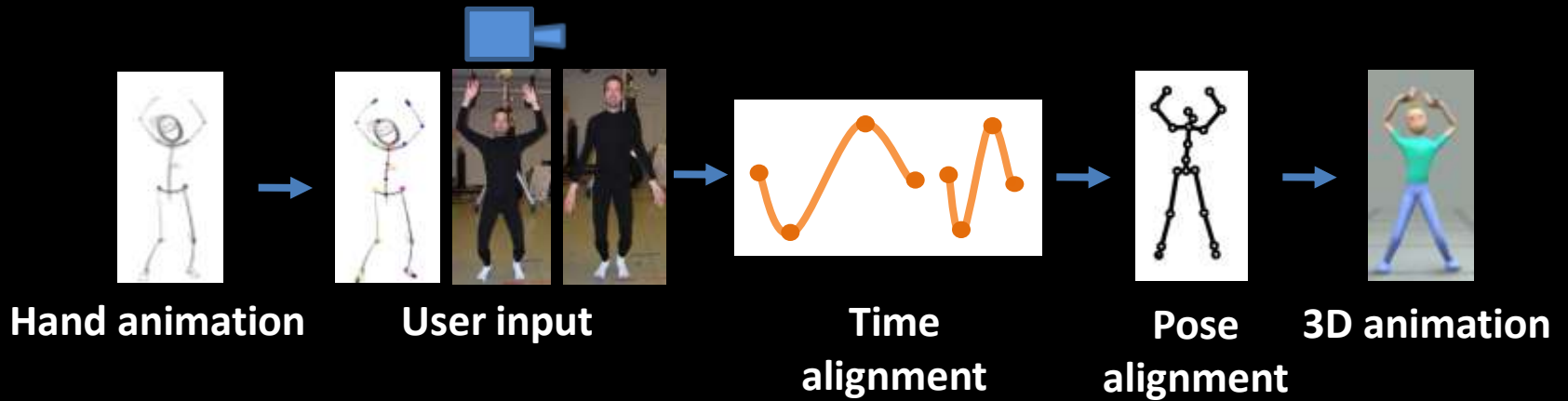


The Incredibles, Pixar

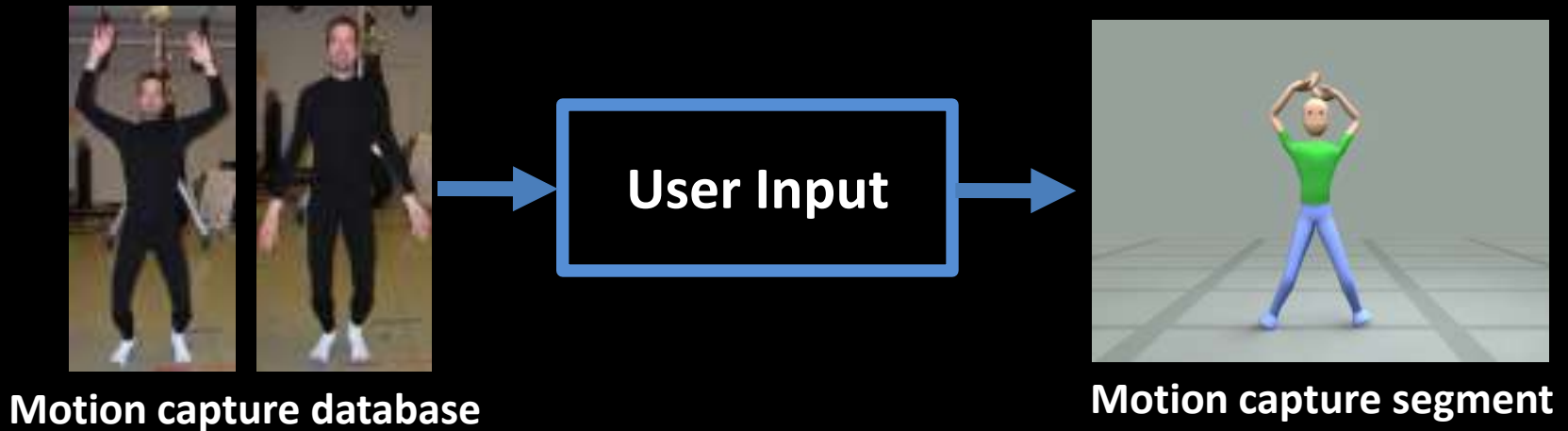


3D animation software

Approach



User Input: Motion Capture Data



Time Series Matching

Hand-drawn



Motion capture



Query frames $Q = \{q_1, q_2, \dots, q_N\}$

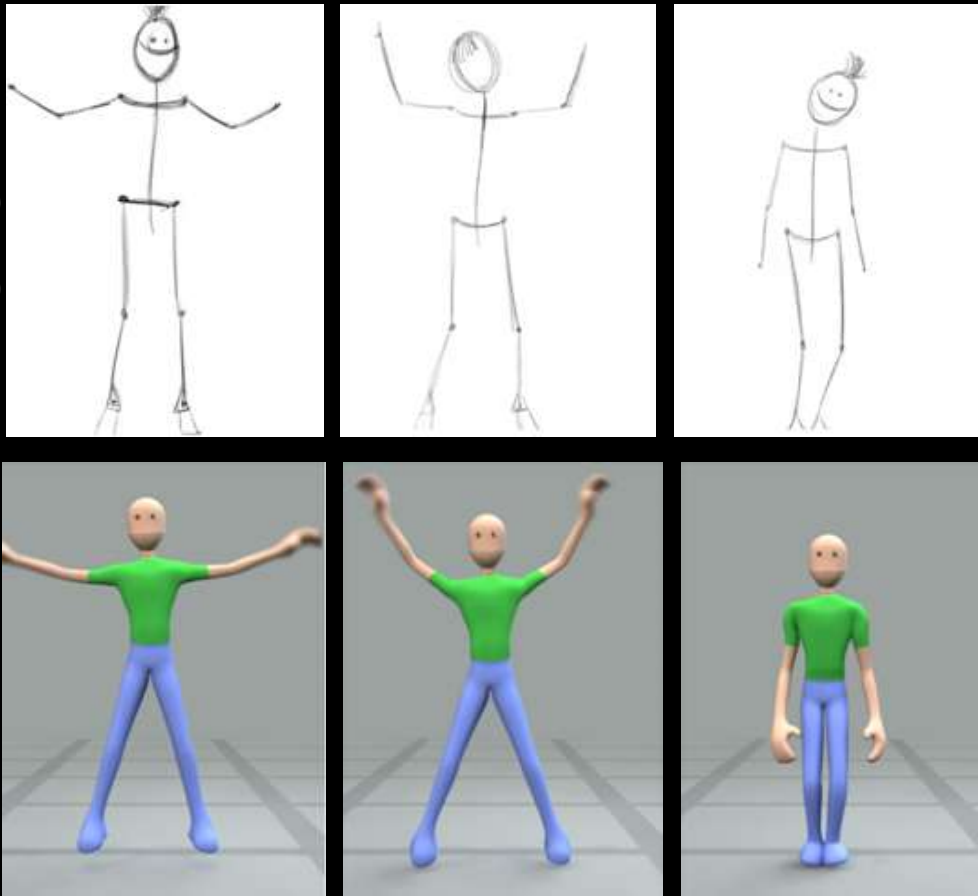
From database D , find the most similar frames $F = \{f_1, f_2, \dots, f_M\}$



Time Series Matching

Hand-drawn
(2D)

Motion capture
(3D)



Challenges

- Notion of similarity
 - Pose descriptor
 - Others?
- Length of matching sequence unknown
- Reasonably quick over large databases



Resources

- Project website:
<http://graphics.cs.cmu.edu/projects/lifting2d3d/>
 - Demo code + data
- CMU motion capture database:
<http://mocap.cs.cmu.edu/>
- Eakta Jain: ejain+@cs.cmu.edu