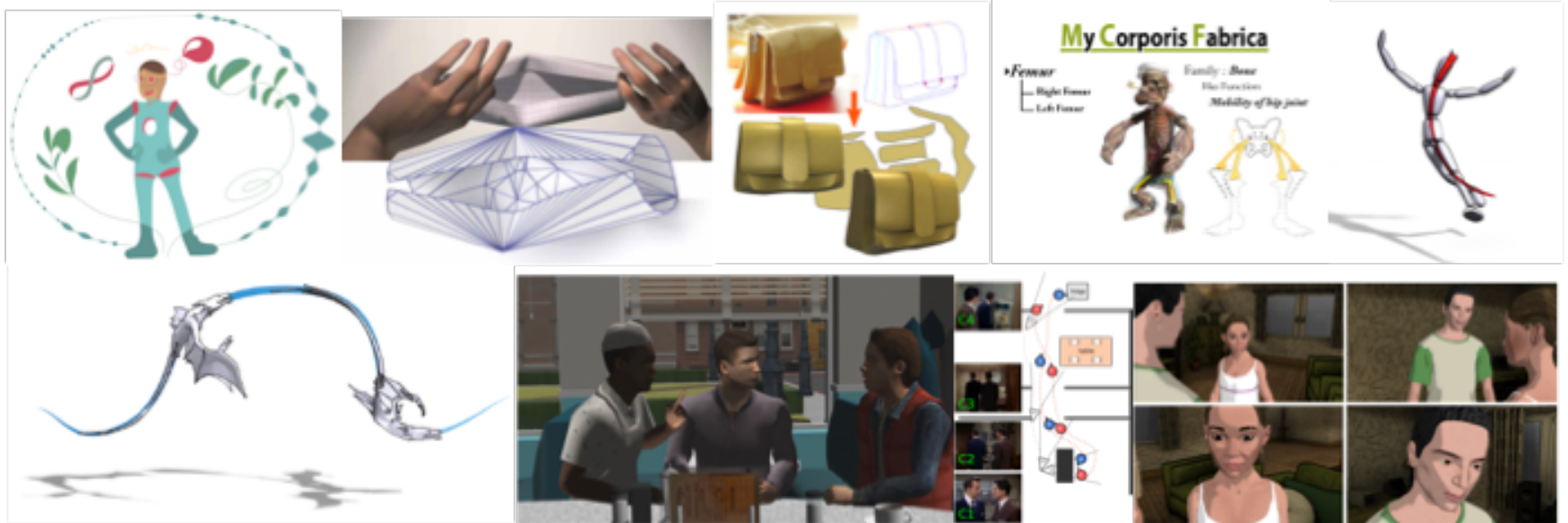




IMAGINE

Intuitive Modeling and Animation for Interactive Graphics & Narrative Environments



Lab. Jean Kuntzmann, Univ. Grenoble Alpes, Inria



From IMAGINE to ANIMA

Authoring and directing animated story worlds

Rémi Ronfard (DR Inria)

Mélina Skouras (CR Inria)

Stefanie Hahmann (Prof INPG)

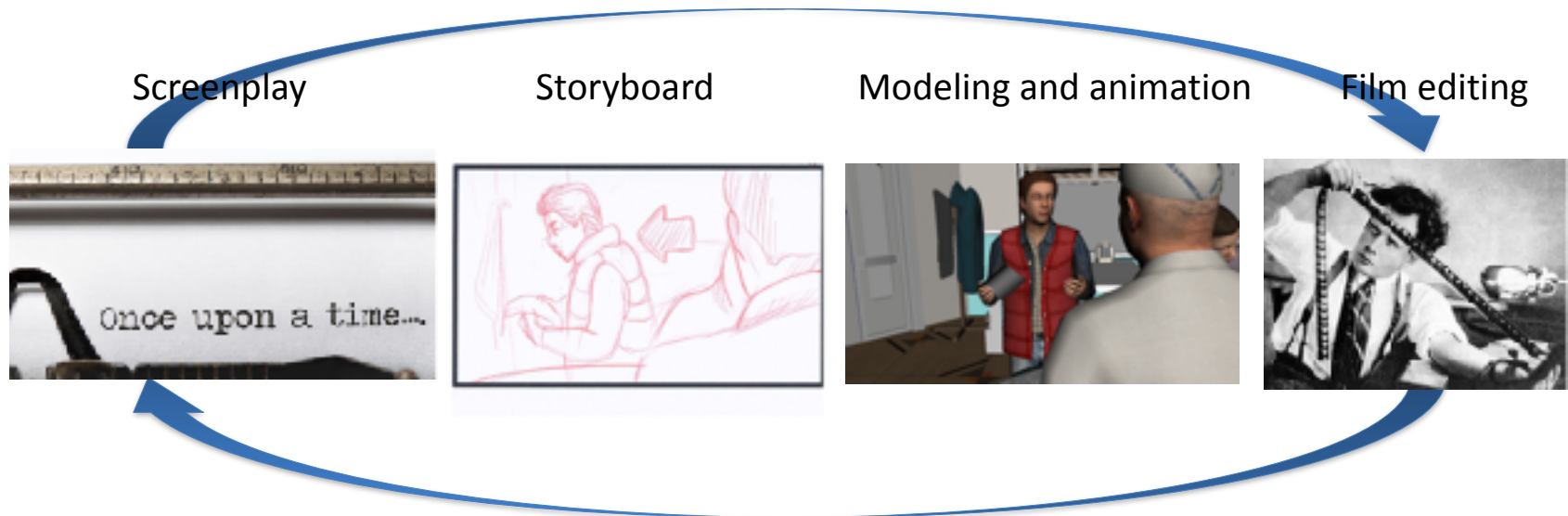
Olivier Palombi (Prof UGA)

Applications: cultural heritage (Lugdunum museum), animation (TEAMTO, Mercenaries), anatomy (Anatoscope), theatre (UGA Performance Lab) and car design (PSA).

Collaborations: Ecole Polytechnique, LIRIS, GraphDeco. ENSADLAB Spatial Media, IIIT Hyderabad, Univ. Wisconsin, Univ. Geneva, Univ. Genova, ETH, MIT.

From IMAGINE to ANIMA

Grand challenge : Build interactive narrative environments where the *user is the director*



In 1966, Alfred Hitchcock dreamed of a machine in which he'd "*insert the screenplay at one end and the film would emerge at the other end*" (Truffaut/Hitchcock, p. 330).



From IMAGINE to ANIMA

- Authoring: story-driven generation of sets, props, actors and costumes (« virtual theatre »)
- Directing: story-driven animation of virtual actors and cameras
- Supported by multimodal story understanding (script, storyboard, gesture, voice)
- Three research axes: story-driven shape modeling, animation and cinematography

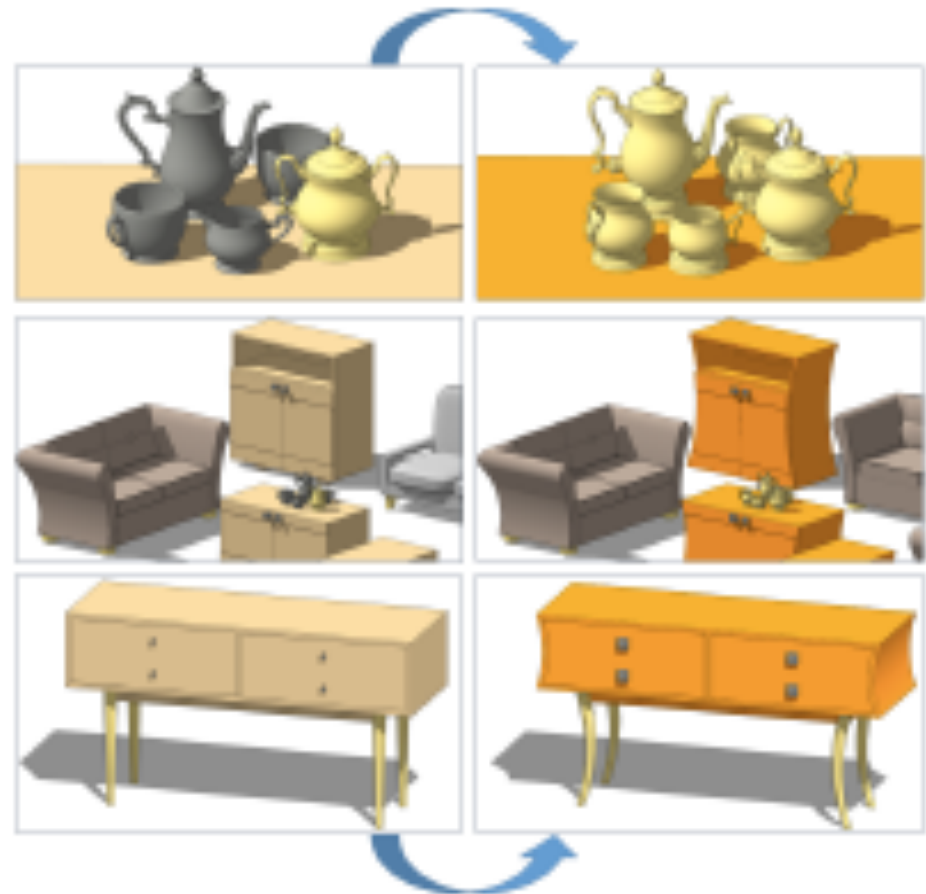
Story-driven shape modeling

- From script and storyboard to sets, props, actors and costumes
- Reverse engineering shapes from movies
- Spatial interaction, shape modeling in AR and VR



Shape styles

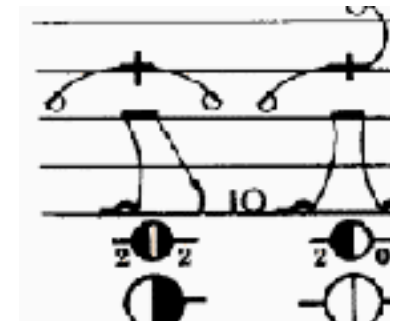
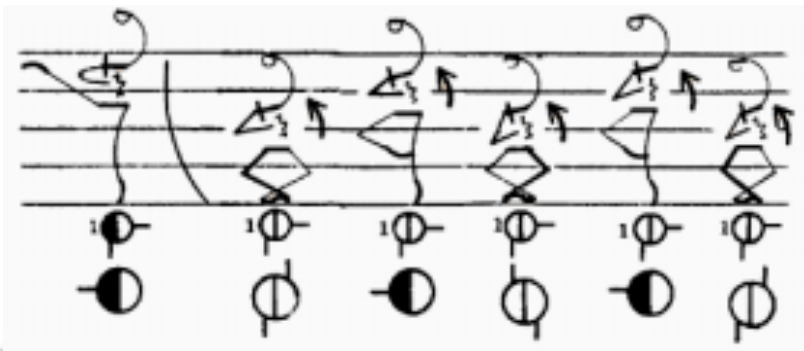
- Authoring shapes with graphic stylesheet
- Learning shape styles from examples
- Transferring shape styles



Lun et al. Functionality Preserving Shape Style Transfer, Siggraph Asia 2016.

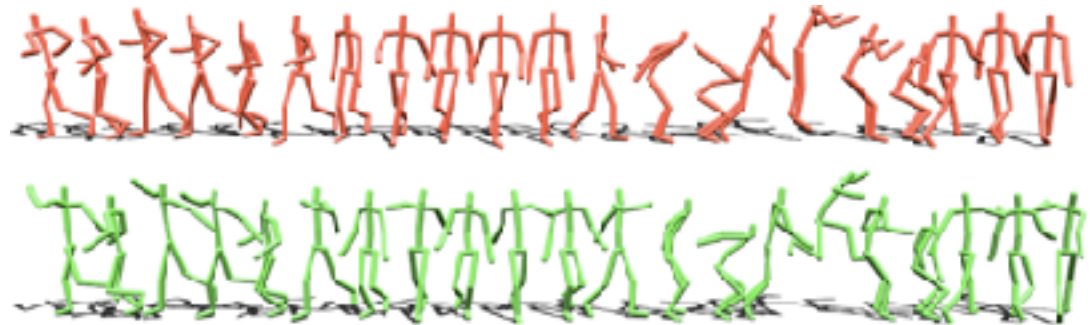
Story-driven animation

- From script and storyboard to animation
- Reverse engineering animation from movies
- Spatial interaction, animating in AR and VR



Animation styles

- Authoring motion with animation stylesheet
- Learning motion styles from examples
- Transferring motion styles



Xia et al. Realtime Style Transfer for Unlabeled Heterogeneous Human Motion, Siggraph 2015

Story-driven cinematography

- From script and storyboard to cinematography
- Reverse engineering cinematography from movies
- Spatial interaction, movie-making in AR and VR

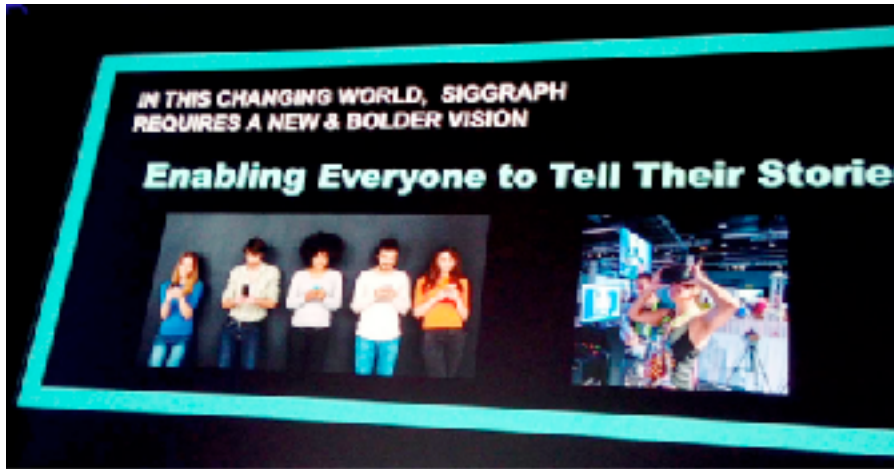


Cinematographic styles

- Directing movies with cinematographic stylesheet
- Learning cinematographic styles from examples
- Transferring cinematographic styles



Conclusion



IMAGINE: Painting and sculpting metaphors useful for authoring virtual worlds

ANIMA: Storyboarding and rehearsing metaphors useful for directing story worlds

Thank you !

