

Reverse Storyboarding



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Context: This Masters thesis will take place in the IMAGINE team at INRIA in Montbonnot.

It is offered to Masters students interested and trained in Computer Graphics.

Objectives:

Storyboards provide an abstract and comprehensive representation of the visual contents and styles of movies, which can be useful for understanding film styles and aesthetics. Reverse storyboarding is the task of reconstructing storyboards from produced movies. It is usually performed by film students as an exercise for understanding movie making, and it is an absorbing and time consuming task. In the past, researchers in computer graphics [1] have proposed methods for reverse storyboarding movie scenes with minimal user input, such as manually selecting keyframes and subjects. But they are limited to short scenes with limited complexity.

In this internship, we would like to further automate the process of reverse storyboarding movies by using recent advances in people and pose detection [2,3]. More precisely, we would like to propose methods for tracking the detected people using their 2D poses; estimating the actors and camera movements; and generating storyboard panels showing the detected actors and their movements with motion arrows typically used by storyboard artists.

This master's thesis is expected to lead to a Phd thesis on statistical analysis of film styles from storyboards.

References:

1. Dan B Goldman, Brian Curless, David Salesin, and Steven M. Seitz. 2006. Schematic storyboarding for video visualization and editing. In ACM SIGGRAPH 2006 Papers (SIGGRAPH '06).
2. **Zhe Cao, Gines Hidalgo, Tomas Simon, Shih-En Wei, and Yaser Sheikh.** OpenPose: Realtime Multi-Person 2D Pose Estimation using Part Affinity Fields. CVPR 2017.
3. Yaadhav Raaj, Haroon Idrees, Gines Hidalgo, Yaser Sheikh. Efficient Online Multi-Person 2D Pose Tracking with Recurrent Spatio-Temporal Affinity Fields, CVPR 2019.