

Learning cinematographic styles from examples

M2R Internship proposal, October 2016

Rémi RONFARD, IMAGINE team, INRIA Grenoble Rhone Alpes

KartEEK Alahari, THOTH team, INRIA Grenoble Rhone Alpes

E-mail : remi.ronfard@inria.fr

Context :

There is currently a lot of interest in using large movie databases for proposing and testing statistical theories of film styles and aesthetics[1,2]. Previous work has been limited to a small number of dimensions of this complex problem, including shot duration, shot size, color and motion, with limited experimental validation.

Objectives :

In this internship, we would like to study the problem of attributing authorship of motion pictures cinematography by learning models of famous cinematographers from example frames of their movies. This will be cast as a supervised classification problem, and we will implement and evaluate solutions that have proved efficient in other computer vision classification tasks.

We will use the data set collected by Cutting et al. [3] and extend the recent work of Thomas et al. [4] from small collections of unrelated photographs to very large collections of temporally coherent motion picture frames.

For simplicity, we will focus on the composition of individual frames, not taking into account other video features such as camera and actor motion, or film editing patterns, which will be left for future work.

This internship is likely to lead to a PhD thesis on style transfer from movies to 3D animation.

References

[1] <http://www.cinematics.lv/>

[2] Barry Salt. Film Style and Technology: History and Analysis, Starword, 2009.

[3] Cutting, DeLong and Nothelfer, “Attention and the evolution of Hollywood film”, Psychological Science, 2010, vol. 21, pp. 440-447.

[4] Christopher Thomas, Adriana Kovashka, Seeing Behind the Camera: Identifying the Authorship of a Photograph, CVPR 2016.